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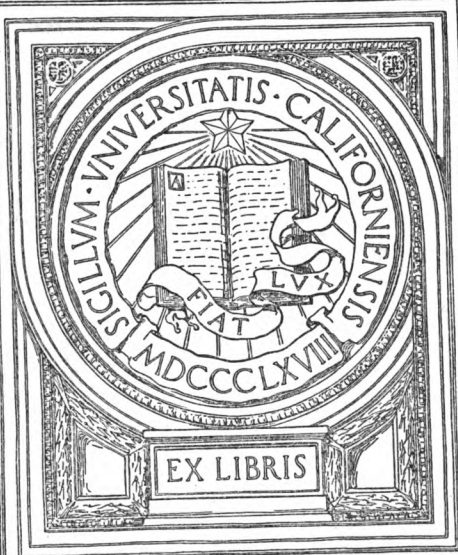
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*DDS A Journal
of Practical Dentistry*

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THE

DDS

A JOURNAL OF PRAGTICAL DENTISTRY

VOL. I.

JUNE, 1906

No. 1

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Porcelain and Crown and Bridge Work

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Prosthetic Dentistry

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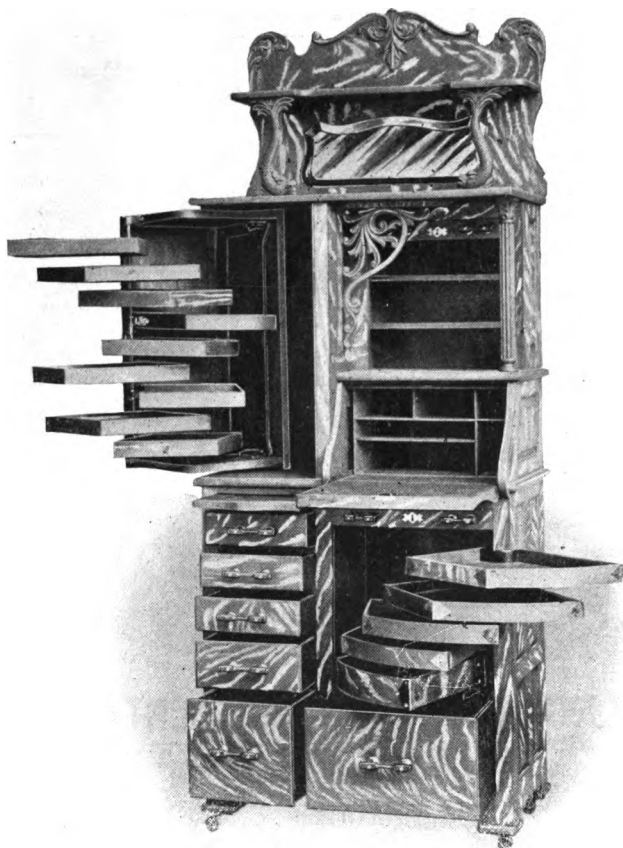
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THE D. D. S.

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SUPPLY COMPANY,
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PROSPECTUS.

The only apology we offer for the production of this, another Dental Magazine, is the crying demand for it by the busy dentist. It is not our purpose to supplant any of the score or more of current dental publications, all of which are ably edited, and filled with matter written by the foremost men of the profession, but rather is it our purpose to enter a new field and give to the dentist a magazine whose principal feature will be brevity.

Long and abstruse articles, a thorough perusal of which would well pay even the busy dentist if he would read them, but alas! he will not, can be found in any one of the older publications, but short and timely articles only will fill the pages of THE D. D. S.

We will endeavor to cater to the busy man, and our editors will select out the best of everything published, and reproduce its salient points. If we can succeed in getting before the dental world a publication that will be read universally by the profession, and correspondingly helpful, then our mission will be accomplished.

WE WANT SHORT, HELPFUL CONTRIBUTIONS.

Dentists are invited to send in items of general interest to the profession, and space will be gladly afforded and

credit given. If any dentist has a new or better way of performing some operation, either at the chair or in the laboratory; if he has a new remedy, a better way of keeping books or collecting accounts; if he knows of anything that will be of assistance to his fellow practitioners; or if he has an experience that would serve as an object lesson to any member of the profession, let THE D. D. S. give it to the world.

DENTAL SOCIETY NOTICES.

We will be pleased to furnish space, without charge, to any dental society that may have matters for publication. Such matters should be forwarded by the proper officer in time to reach us by the first of the month on which publication is desired.

THE QUERY DEPARTMENT.

If any of the subscribers of THE D. D. S. have a troublesome experience, or are puzzled about a proper method of treatment for some case they may have on hand, a query addressed to this magazine will have the fullest consideration and be answered in the next number.

FREE ADVERTISING SPACE.

The last page of THE D. D. S. will be devoted to WANTS and FOR SALE advertisements. This page will be at the service of our subscribers, and we invite them to use it without cost as often as they wish to do so. If there is an office for sale, or location wanted; if there is need of a position or an assistant; if there are any dental books, dental magazines, instruments or appliances that are not in use and that might be de-

sired by some other member of the profession, let THE D. D. S. make the announcement. If a sufficient number of responses are not secured the first time, try again.

This service being free, we can assume no responsibility for such advertisements, and all correspondence relating to it must be done direct. When replies are to be sent in our care, sufficient postage for forwarding should be included with the copy. This must be received in this office by the first of the month on which publication is desired. Address all communications to THE D. D. S., Dayton, Ohio.

ADVERTISING ANNOUNCEMENTS.

We believe that the matter of supplies used by the dentist is of interest equal to that of the methods by which they are employed, and we will endeavor to introduce in these pages from time to time, such new materials and devices as may be developed, as well as all standard specialties.

We will, however, allow representation to none but reliable goods, which, to the best of our knowledge, will give satisfaction to the users.

Porcelain and Crown Bridge Work

Alden Bush, D. D. S.

REMOVAL OF CROWN SET WITH GUTTA-PERCHA.

For the application of heat a very satisfactory little Bunsen can be made by removing the curved platinum point of an abscess syringe, inserting it in a piece of hard rubber tubing of proper diameter. A six-inch length of tubing affords a good hand piece. Attach to gas connection with a soft rubber hose—red rubber hose of thin pliable weight is preferable. This can be carried to any part of the mouth with perfect safety.—Dr. Benson Sellery.—North-western Dental Journal.

BUBBLES IN PORCELAIN.

I believe the reason I do not have bubbles in this is that in mixing the body I spatulate it with a great deal of force, mix and incorporate it thoroughly, grinding it down with a strong spatula and when it comes to settling the body, settling it vigorously in one direction. So many when they have a crown or inlay upon a vice, or otherwise, will settle the body in one direction, then they will turn it over and unsettle it again, and rasp it up, change

the original settling of that body until—why shouldn't there be bubbles?—J. D. Patterson, Western Dental Journal.



FUSING PORCELAIN.

The following deductions are from experiments:

1. That porcelain has no definite fusing point.
2. By prolonging the time of exposure to heat a thoroughly fused porcelain may be obtained at a comparatively low temperature.
3. That porcelains fused at a lower temperature for a long time will maintain their characteristic color.
4. That low-fusing porcelains can be made of high-fusing porcelains by repeatedly fusing and grinding.
5. If a piece of porcelain is thoroughly fused and more porcelain added and fused, the first layer will be slightly over-fused.
6. That porcelains containing a large percentage of flux are affected more by bubbles than those that are more nearly composed of the basal ingredients.—J. Q. Byram, Indianapolis, Dental Review.

DISADVANTAGES OF PORCELAIN CROWNS WITH BANDS.

First, perhaps, in importance is the irritation resulting from the presence of the band underneath the free margin of the gum. Although the band may be fitted with great care, so that apparently there is no projection between the band and the root, and even though it be ever so thin, it acts as a foreign body and is a constant source of irritation, however slight it may be. If the band is fitted so as to be entirely under the gum, it is the observation of critical dentists that the band not only becomes visible after a short time, but more than that, at the point of junction between the band and the root there is a seat of irritation resulting in absorption and its sequelae. It is not natural to have a foreign substance occupying the space between the free margin of the gum and the tooth.—U. M. Richardson, Chicago, Dental Review.

SENSE OF FEELING A GUIDE IN FITTING BAND CROWNS.

I do not like to benumb the gum when about to fit a band-crown; the sense of feeling on the part of the patient, serves to indicate when the band is shaped to fit the root just beneath the free margin of the gum. One may impinge on the soft tissue, but it is neither desirable or necessary to cut into it to any great extent. Indeed, when the band is put on for the final adjustment it should not even blanch the gum; if it does it is pressing the parts and will later cut deeper and induce recession of the affected tissue. When the gum has been wounded in grinding the root or in reducing the band to root-level, the acid of the cement works into the wound and gives rise to discomfort similar to that following the application of salt or vinegar. This of course subsides as the cement sets, but is anything but pleasant while it lasts. To overcome pain inadvertently induced and to head off that that may attend the setting of the crown, I dry the root and adjoining gum and paint them with chloro-percha. The

effect is immediate and the discomfort hardly worthy of mention.—J. C. Edington.—Dental Office and Laboratory.

TO MAKE A TEMPORARY CROWN IN TEN MINUTES.

In crowning anterior teeth you all have had cases when the patient objects to appear in public minus a tooth, even for a few hours, and on looking over your stock you find that you have nothing suitable for the case, or if so your time is so taken up you cannot give it proper attention.

You can solve the difficulty in a few minutes by selecting from your plate or rubber teeth one of proper size and shade; take a Davis post or make one of almost any convenient material (German silver will do nicely), and insert one end between the pins of the tooth and squeeze the pins together until they jam enough on the post to hold it in position; tack with soft solder by passing carefully through the flame of a Bunsen burner, and try in the mouth and adjust post; then pack Gilbert's stopping or other easily softened gutta-percha about post and palatin portion of tooth, and while soft press to place in the mouth, holding the crown firmly between thumb and forefinger in such a way that you force the gutta-percha about root of tooth, remove and trim away excess of gutta-percha, and set as an ordinary crown.

A temporary crown can be made in this way in a few minutes; the one I pass about was worn for several weeks.—C. F. Graham, Dominion Dental Journal.

THE FUSING OF PORCELAIN BRIDGES.

A word of precaution incident to fusing: All porcelain bridges must be thoroughly supported before introducing into furnace. The method I have found most useful is to mold a slab of fire clay to conform with abutments and saddle of bridge and bake. As the fire-clay shrinks some in baking, it is necessary to trim and readapt to bridge,

or a thick mix of Brophy's investment compound may be laid on a slab of fire-clay at least one-eighth inch in thickness and the bridge imbedded in the investment compound until dry. Then trim to outline of saddle, and band to prevent porcelain coming in contact with support. A film of wax should be added to posts and diaphragms to facilitate removal from support. This support will last through several bakings, as the investment compound is supported by the fire-clay slab, and there is hardly any perceptible change. It affords a perfect support to all metal surfaces and prevents any possibility of warping. Bake with any good high fusing body, and finish all surfaces that come in contact with the tongue with a lower-fusing body, such as Brewster's XX or Jenkin's prosthetic body. If a gum enamel is required, I prefer Brewster's pinks, as they can be mixed with oil and laid on in any thickness desired to bring about an artistic result in the shading indicated. I prefer to set all bridges with gutta-percha and cement in combination.—J. D. White, St. Louis —Dental Era.



FUSING OF PORCELAIN BRIDGES.

I should advise all the gentlemen to be very careful not to fully fuse the mass of porcelain which is first put on the bridge and carved up, because fusion of the second mass will over-fuse the first mass. There is no question at all but what the fusing of porcelain is a chemical process as well as a physical process, and there is no question at all but that the chemical process goes on even after what we term fusion is completed, providing the proper conditions regarding the thermal situation are maintained. I made some experiments in that line, and I will show the specimens tomorrow morning. I took two masses of porcelain and carved them as nearly as possible into two identical blocks. They were both put into the furnace, and carried to the point of a biscuit. They came out with absolutely no suspicion of glaze to them. Then one piece was put

into the furnace and carried up to the same point time and time again, and examined after each heating to see what the result was. Each time a control piece was put in there, so that I was sure I had not carried my furnace above the "biscuit" point. With the result that at the end of seven fusings I had one of the most beautiful pieces of porcelain I ever succeeded in fusing in my life. What does that demonstrate? To me it demonstrates that to a large extent "heat units" are factors in this fusing, and "heat units" are factors of importance in chemical process rather than those that are physical. That is a demonstration that the chemical processes that were instituted at the time the furnace was carried up to the point sufficient to biscuit it, were carried on when it had been subjected to the same amount of heat subsequently.

I am quite confident that we have all been fusing our porcelains too quickly. You can obtain the same result by prolonging the time of the exposure, and cutting down the intensity. We have been "broiling" our porcelain instead of "baking" it. I feel that porcelain bridge-work is to be a permanent process because it has passed through such a trying period of failures and emerged triumphantly. I beg of you to equip yourselves so that you may go on with this work, which produces such artistic results, and results that are so splendid from a sanitary point of view.—J. E. Nyman, Dental Review.



TO CROWN OR NOT TO CROWN.

At the recent meeting of the Alumni Association of the Chicago College of Dental Surgery, Dr. J. D. Patterson, of Kansas City, read a very instructive paper on "The Gingival Border," in which he took decided stand against the abuse of this tissue by banded crowns. He claimed that the irritation of bands had caused the loss of many teeth, and that wherever crowning was necessary it could be accomplished without bands. As to the relative merits of banded or bandless crowns we are not disposed to

enter into argument at this time, except state that it is manifestly evident that many bands do undoubtedly cause more harm in irritation than the good they accomplish in strengthening the root.

But what we wish particularly to emphasize is the oft-repeated contention that crowning is so frequently resorted to in cases where it is wholly unnecessary. In the face of all that has been spoken and written upon the subject the fact still remains that this is one of the crying shames of dentistry. Men still continue to take molars and bicuspsids with nothing more seriously wrong than an ordinary proximal-occlusal cavity and grind off the tips of the cusps and slip on a shell gold crown. They also cut off an incisor under the same circumstances, and even go so far in some instances as to advocate a crown where there is only a simple proximal cavity

if the form of the natural tooth is not as "pretty" as they think they can make a porcelain crown. This is folly run into injustice, and be it said it is not done by the most expert crown workers. The men who have attained the highest perfection in crown work have discovered its limitations and learned conservatism.

But the extent of needless crowning by irresponsible practitioners has become really a reflection on the profession, and this is particularly true since inlay work has reached its present stage of efficiency. Inlay work steps in to fill the breach between ordinary filling and the ultimate and last resource of a crown. Let each practitioner, when a patient is in his chair, do as he would wish to be done by under like conditions, and there will be fewer crowns and more fillings and inlays.—C. N. Johnson, April Review.

ORTHODONTIA.

Frank M. Casto, M. D., D. D. S.

"OCCLUSION."

"Occlusion is the basis of the science of Orthodontia."—Angle.

"OCCLUSION."

Upon a proper appreciation of Occlusion—the basic principle of Orthodontia—depends the success or failure of our cases.—Reoch, Cosmos.

"DIAGNOSIS."

Without a knowledge of diagnosis, a man who attempts the correction of mal-occlusion reminds me of a ship captain without compass and chart, trying to make a distant harbor, but to him who is given an understanding of diagnosis, is given both compass and chart to guide him; his successful voyage is assured, providing of course, that he is a good captain.—Rogers, Cosmos.

"REQUIREMENTS."

If Orthodontia ultimately is to become a recognized specialty of dentistry, let the educational approaches to it be safeguarded so that the incompetent will be excluded, and none be admitted whose elementary training in dentistry has not been the broadest obtainable, and therefore ripened by the experience of practice supplemented by special study to fit him for this important work.—Ed. Cosmos.

"SPECIALTY."

With the establishment of Orthodontia as a distinct specialty, there ought to be a noticeable improvement in the standard of results obtained by those engaged in its practice. The specialist can not be satisfied with a simple improvement in the positions of the teeth, but must strive for the best occlusion and the best facial expression compatible with the peculiarities and type of the patient.—Lourie, Items.

"PATHOLOGIC IRREGULARITIES."

In contradistinction to the above, (Pathologic Irregularities) there is a class of irregularities not treated of in works on orthodontia, nor have they been considered under the head of dental orthopedia. In fact, these cases seem in a way to be "the stone which the builders disallowed."

They are in many particulars the exact opposite of the others. 1. They do not appear until the age of mature years. 2. They are purely acquired. 3. They are entirely pathologic, in the sense that they are the results of disease, localized in the alveolar process. 4. They are only amenable to mechanical treatment by first removing the causes of the disease producing them.

In order to distinguish these from those previously described, the writer has called them pathologic irregularities.

To describe all the causes of pathologic irregularities would be to give a treatise on interstitial gingivitis, known also as pyorrhea alveolaris and Rigg's disease.—Fletcher, Dominion Dental Journal.

"THE ORTHODONTIST AND THE DENTIST."

An increasing number of dental graduates are electing to adopt Orthodontia to the exclusion of general practice, but at the present time it is still true that of those who are specialists in this field, by far the greater number are men who for years conducted a full practice, and who have by this means acquired a knowledge which is invaluable if not indispensable to the best results in Orthodontia. This and the further fact that the leaders in Orthodontia have lifted that branch of our work to the plane of a special science, should be remembered by both Orthodontist and Dentist. The Orthodontist should not overlook the fact that a ripe knowledge of general practice will often be requisite to the wisest diagnosis, while the dentist must hereafter remember that the little that was taught him of this comparatively new science ten or twelve years ago when he was in college does not authorize him to pit his judgment against opinions of men who have made the correction of irregularities of the teeth a life's study.—Ed. Items.

PROSTHETIC DENTISTRY.

Harvey V. Cottrell, D. D. S.

SEPARATING VARNISH.

While the following formula for separating varnish is not new, it may be unfamiliar to some.

Shellac 6 ounces
Borax 3 ounces
Water 1 quart

Sig.—Dissolve the borax in the water, bring to a boil, and add the shellac.—A. Daughaday, Western Dental Journal.

TIME OF WEARING AN ARTIFICIAL DENTURE

During the time the patient is acquiring the habit and knack of using an artificial denture (usually about six weeks), it should be removed from the mouth only for cleansing; after that, it is better for the contiguous tissues if the denture is removed upon retiring.

Geo. H. Wilson,
Dental Summary.

KEEP YOUR FLASKS CLEAN.

Place a small quantity of sodium bicarbonate in your vulcanizer before using and you will be surprised how clean you can keep your flasks. They are readily and easily cleaned after such use, quite a difference from those found in most dental offices.

H. E. Davis,
Dental Review.

PACKING RUBBER.

When packing a plate, many lay a napkin over a dish of hot water, allowing the steam to soften the vulcanite rubber. The napkin often sags down into the water or slips off, causing considerable annoyance. By stretching a single thickness over a wooden embroidery hoop you have an ideal contrivance. The rubber will not fall off or stick to the napkin, and you will be pleased with the result.—A. C. Willman, Dental Review.

REPAIRING GUM SECTION.

To repair a broken tooth in a gum section, grind out the broken tooth from the section, even with the gingival margin, then select a plain vulcanite tooth of proper size and shade, and grind to fit the space. Pack in fresh vulcanite around the pins of the tooth and vulcanize as an ordinary repair case. If a little care has been used in making the joint at the gingival line, the job cannot be detected from a full new block.—F. H. Wilkinson, Dental Summary.

SELECT TEETH FOR THE PATIENT.

The patient that insists upon having pearly white teeth may be convinced that they are not proper for her to wear, and when she learns that the selection of teeth is not merely guesswork, in the matter of which she considers herself a good guesser, you have gained the confidence of your patient, and the next necessary proceeding is to get a good deposit fee, just to make them fit well.

C. O. Metzler,
The Dental Digest.

ACCURATE ARRANGEMENT OF TEETH A NECESSITY.

There are more failures from faulty articulation than from any other cause. Never allow the six anterior teeth to come in contact. Be sure the two sides occlude exactly. If a second or third molar is tilted forward so as to be at an angle, do not allow the upper teeth to meet it, for sooner or later the plate will be crowded forward. The pressure should be on the bicusps and first molars.

L. P. Haskell,
The Dentist's Magazine.

FITTING EDENTULOUS METAL PLATE.

Try the plate in the mouth and see if the fit is correct. Wet the maxillary surface and place in the mouth, then with the finger use a pumping motion and watch for air bubbles at the posterior margin; if any appear, place the plate on the plaster model and with a broad flat burnisher, burnish closer where the bubbles appear, and if necessary scrape the plaster model a little at that place.

L. P. Haskell,
The Dentist's Magazine.

BALANCE THE PLATE.

When a plate is put in place it is not for looks alone, but is intended to give to the patient something of far more value. During the process of mastication the force applied is in some cases surprising; it is claimed to vary from fifty to two hundred pounds and in some cases to exceed this amount. Knowing this, it is clear to us why we should have the plate resting on a base that will change form as little as is possible. To accomplish this result it is necessary, in some instances, to displace the soft tissue to a considerable extent. If this is not done there will be a rocking of the plate and consequently a breaking of its adhesion.—H. A. Shannon, Dental Summary.

MAKING ARTIFICIAL TEETH RESEMBLE NATURAL ONES.

All teeth, unless "special," come to the dentist with sharp cusps and rounding curves that should designate them for a young person; but the dentist may grind the teeth and prepare them for the age of the person even to the imitation of decayed, abraded or even broken teeth. The decayed spots may be made by grinding out fissures or cavities and placing therein brown porcelain, which, when baked, insures a stain even if the teeth must be ground.—C. O. Metzler, *Dental Digest*.

A HINT ON IMPRESSION TAKING.

To prevent the plaster from flowing down the patients throat when taking an impression, prepare the tray as follows: Puncture the impression tray near the heel, making several holes about a quarter of an inch in diameter. Build up the heel with wax to reach the palate, and from this carry a piece of sheet wax forward under the tray. When taking the impression the surplus plaster will be forced through the holes and carried forward by the sheet of wax under the tray, thus effectually protecting the throat. The same result may be attained by cutting a V-shaped piece from the rear of the tray and building with wax, as described above.

F. W. Stephan,
Dental Review.

A HELP IN ASSEMBLING THE PARTS OF A BROKEN PLATE.

It is often difficult to securely wax together a broken plate, especially a lower partial. The attempt to hold the broken pieces in one hand while you attach them with the other makes you wish you had three or four hands. If a strip of wax, such as the dental depots use to attach a set of teeth to, be softened and laid on a flat, unyielding surface, a piece of glass for instance, the broken plate may be pressed, teeth down, into the wax, using both hands to hold the pieces in proper position. When you let go, they will remain in

place and you are free to examine carefully and wax together.—A. C. Willman, *Dental Review*.

CLASPS.

In gold work the clasp is either soldered to the plate or connected to the plate by means of one or two standards. For vulcanite work a lug is soldered to the clasp; the base plate may then be extended any distance to grip the lug.

The attachment to the clasp should be one-eighth to three-sixteenth of an inch wide, and should be placed as near the middle of the long way of the clasp as the setting of the teeth will permit. By this arrangement a spring clasp will not be converted into an unwieldy stay clasp.

Clasps properly conceived and formed are a blessing to both patient and prosthodontist, but, improperly used, are vexatious to the dentist and a detriment to the victim.—Geo. H. Wilson, *Dental Sumamry*.

REPAIRING FRACTURED CASTS.

A valuable method of repairing plaster casts may be found in the use of celluloid dissolved in camphor and ether to a creamy consistency. A good quality of celluloid should be selected and to it should be added a mixture of equal parts of ether and spirits of camphor. This combination dissolves celluloid rapidly and should be added to the material until a solution of a creamy consistency is obtained. The preparation should be kept tightly corked to avoid its evaporation.

When it becomes desirable to repair broken casts the fragments to be attached should be well dried and both surfaces should be freed from broken particles. The surfaces should be coated with the celluloid solution, and after being pressed firmly should be allowed to dry.—S. M. Weeks, *International Dental Journal*.

OPERATIVE DENTISTRY.

Harry M. Semans, A. M., D. D. S.

REMOVAL OF REMAINING DECAY.

The operator who has no definite idea in regard to the finished form he intends to give to his cavity, until after he has explored and removed all his decay, is usually consuming a great deal of time uselessly. He is like the fellow who wanted to cut off the dog's tail, and did it a little at a time.—H. E. Friesell, The Frater.

DON'T FUSE PORCELAIN TOO FAST IN THE MAXIMUM TEMPERATURE.

In conclusion I wish to protest against the method of fusing porcelain at its maximum temperature for a short time. It makes the porcelain more brittle and causes the formation of minute bubbles throughout the mass. The intense heat required to fuse the porcelain in a short time causes the generation of gas faster than it can escape, and porous instead of homogeneous mass has been the result.—J. Q. Byram, The Dental Review.

SEE THAT THE PATIENTS GO AWAY WITH CLEAN MOUTHS.

No patient should be permitted to leave the office without having the teeth thoroughly cleaned and then given some instruction as to the best method of keeping them that way. I am often asked what I recommend and do not hesitate to name a particular preparation, because in my experience with my patients it has proven very effectual. Then we should request the patients to return to the office frequently for examination. This will stimulate them to keep their mouths in good condition, and even if we do have to do this sometimes free of charge we are not losing by it.—T. H. Daly, The Dental Review.

AMALGAM FILLINGS A BLESSING.

I have practiced long enough to realize that an amalgam filling, in order to be a credit to the operator, should be as painstaking an operation as that of filling the tooth with gold. After all do we not have patients that cannot afford to pay for a gold filling? Is it not a blessing to be able to save a tooth with some cheaper material than gold? For my part I could not conduct my office without amalgam. Render to your patients the best services possible, under all existing conditions.—J. Clyde Reader, The Dental Brief.

THE USE OF GOLD BEATERS' SKIN IN MAKING MATRICES.

This is an exceedingly thin bladder-like material which gold beaters use when beating the metal into foil to avoid tearing. In making a matrix the gold beaters' skin is placed on the under side of the foil and therefore next to the cavity walls. The foil can then be forced to a very considerable depth without tearing. After the edges are thoroughly burnished the gold beaters' skin is easily removed and the matrix can be returned to the cavity for a final adaptation to the walls.—R. Ottolengui, Items of Interest.

MOISTURE PROOF POINTS IN GOLD FILLINGS.

The filling is built up piece by piece (pellets), always malleting from the center of the cavity towards the walls, thereby causing the gold to be driven or "flowed" towards the walls, making a moisture proof joint. The last blow upon a given pellet should be the one that sends it snugly against the wall. If we mallet the piece against the wall first and then toward the center, we will have made the piece hard and it

will draw (being springy) away from the wall as our plugger-point travels toward the center.—J. V. Conzett, Dental Cosmos.

AVOIDING CARELESS SEPARATION OF TEETH.

Another instrument, the careless use of which is liable to endanger the dentist's chances of reaching heaven, is the tooth (mechanical) separator. When at all practicable it is best to use the slow method of separating by forcing seaweed or gutta-percha between the teeth. Where immediate separation is called for an orangewood wedge is less painful than the separator, since the gum tissue is not compressed. In those cases where the separator (mechanical) is employed, the teeth should be moved slowly.—J. R. Markel, The Dental Summary.

AN EASY WAY TO MAKE A GOLD INLAY.

The matrix is made either of gold or platinum foil, same as used for porcelain, although heavier can be used with no disadvantage. While the matrix is in the cavity mat gold is packed into it in much the same manner as spunk. No particular care is necessary and dampness is not harmful. When the cavity is partly filled with gold, remove the matrix and cover the exposed surface with liquid rouge, or other material, thereby preventing solder from flowing anywhere except in the cavity. Place form on soldering block, touch mat gold with soldering flux and melt small pieces of 22 k. solder into the gold until cavity is full. It is then finished and cemented into place, using force if necessary. After the cement is hard the filling is polished in the usual manner.—W. A. Capon, Items of Interest.

Dental Pathology and Medicine.

Garrett A. Billow, A. M., D. D. S.

CONTROLLING HEMORRHAGE FROM PULP REMOVAL.

For controlling the hemorrhage following pulp removal or when placing porcelain crowns, I know of nothing which equals Cotoxa liquid.—Editor THE D. D. S.

LOCAL ANESTHETIC.

The following is an admirable local anesthetic to be used before the opening of boils, felons, etc.: Chloroform, ten parts; ether, fifteen parts; menthol, one part. Spray on part with an atomizer.—Monthly Cyclopedia of Practical Medicine.

DO NOT USE DIOXIDE OF HYDROGEN IN A MAXILLARY SINUS.

I have been asked whether I would use dioxide of hydrogen in a maxillary sinus. I would say most emphatically, no. In the first place, unless you have secured two large counter openings in the antrum, you will produce tremendous pressure by the liberation of the extra atom of oxygen and cause your patient a great deal of pain and suffering; consequently I say no, do not use it.—M. L. Rhein, Pacific Dental Gazette.

FOR SORE AND SPONGY GUMS.

A useful mouth-wash is made with tincture of myrrh, a dram to a tumblerful of water; or tincture of iodine (two to four drams in eight ounces of water) with tannin. Bartholow employed a mouth-wash of one dram of tannic acid, two ounces of honey of rose, and four ounces of water. Davis recommends a weak solution of thymol, boric acid, or carbolic acid; also a weak galvanic current for seven to ten minutes through the parotid and salivary glands.—Denver Medical Times.

STERILIZATION OF INSTRUMENTS.

Preferably place all instruments into 5 per cent. lysol for half-an-hour or longer, after using. It sterilizes and does not corrode or discolor them, even if they be left in it for a week. It is well also to place them in 2 per cent. formalin solution for a few minutes before use. Forceps it is well to boil. Placing them in gasoline for a minute will remove rust from joints; if necessary to lubricate joints, use 5 per cent. lysol in vaselin. If your right-angle hand-piece rusts, don't swear; soak it in gasoline, which is more effective.

Thos. Fletcher,
Dental Record.

THE ORAL SECRETIONS.

I find in my practice that in a patient whose oral secretions are thick and ropy and not changed rapidly, there is a much greater accumulation of lime deposits about the neck of the teeth, and after these deposits are removed there is a rapid recurrence of them, so that removal of the deposits alone will not cure the condition. A change of environment or a change in the mode of living, together with systemic medication, bringing about a more healthy condition of the general system, may effect a cure for a time, or until similar conditions are again brought about.

J. A. Freeman,
Dental Review.

GANGRENOUS PULPS.

There are occasionally found putrescent pulps, which are extremely sensitive to the touch of a broach, where the treatment would cause more or less pain, owing to the mummifying agents in the combination. We find arsenic of little service in further destroying the life of the pulp, the blood vessels being engorged and the circulation impaired to such an extent that it is not properly absorbed. Nor can we use pressure anesthesia for the same reason and through fear of forcing septic material through the apex of root. For

such cases I employ a mixture of tannic acid and glycerin, which will in a few days so toughen and tan the pulp that it may be removed with little or no pain. The after treatment would be identical to previous description, until in a condition to be filled or crowned, as the case may require.

Algy F. Strang,
Dental Review.

ANTISEPTIC MOUTH-WASHES.**Carbolic Acid.**

R—Carbolic acid, 2 parts
Glycerin, 3 parts;
Chloroform, 1 part.

Sig.—Five to ten drops in a wineglassful of warm water.

Benzoic Acid.

R—Benzoic acid, 5 grains;
Thymol, 1 grain;
Ol. menth. pip., 8 drops;
Tr. eucalypt., 1 dram;
Alcohol, 1 ounce;

Sig.—A teaspoonful to a tumbler of warm water.

Salicylic Acid.

R—Salicylic acid, 10 grains;
Ess. menth. pip., 10 drops;
Tr. lavand comp., 20 drops;
S. V. R., ½ ounce;
Aque ad 1 ounce.

Sig.—A teaspoonful to a tumbler of warm water.—Medical Times.

CAMPHO-PHENIQUE AS A LOCAL ANAESTHETIC.

All operations in the mouth should be preceded by the application of a local anaesthetic. In many mouths nausea, even vomiting, is caused by the insertion of fingers, instruments, or impression-trays.

To avoid this especially is campho-phenique indicated to obtund local sensation and prevent pain incident to the removal of calculus, polishing teeth, wedging, applying and ligating the rubber dam, removing loose roots, and to prevent nausea, gagging, etc., prior to taking impressions.

Nothing to the writer's knowledge acts

so nicely as ten grains of finely powdered cocaine added to one fluid ounce of campho-phenique (original) package. This makes approximately a two per cent. solution, which, when applied on a large-sized pledget of cotton to the entire mucous surface of the mouth, completely obtunds local sensation and overcomes nausea.

In cases of odontalgia from an exposed pulp a warmed application of this solution on a pellet of cotton usually relieves the pain, and for treating sensitive cavities preparatory to filling it is of equal value when the remedy is sealed in the cavity with temporary stopping or gutta-percha.—Burton Lee Thorpe, Dental Brief.

OBTUNDER FOR SENSITIVE DENTINE.

I desire to call your attention to a few practical prescriptions, and in doing so it is my intention to emphasize the pharmacy involved in the combination of these various drugs, as well as to describe their dental and therapeutic application.

R. Menthol, gr xx
Chloroformi, f 1 dram j
Etheris, f ½ ounce ss

M. Sig: Use as directed.

The first prescription is one that you can use for obtunding sensitive dentin. It is not a panacea for all ills. It will not completely de-sensitize all dentin, but in large cavities where there is an extensive area involved, and where the dentin is extremely sensitive, you can take a little pellet of cotton and place it, saturated with this liquid, in the cavity, after the rubber dam is adjusted, and you will find by the time you are ready to excavate the dentin that these two extremely volatile liquids, ether and chloroform, have volatilized. The value of this remedy depends largely upon the volatilization of these fluids. No solid can turn to a liquid, and no liquid to a gas unless it does it according to a certain law in physics by extracting a certain amount of heat. As these two liquids are volatilized

there is abstracted from the tooth structures a certain amount of heat, and that volatilization drives the menthol into the decayed dentin. You can not remove the decay painlessly in all instances, but you will be surprised to find at times how painlessly you can remove it after you use this remedy.—J. P. Buckley, Dental Review,

MUMMIFYING AGENTS IN DENTAL PRACTICE.

Mummifying agents are various, and act by drying, coagulating, and hardening the tissues and permeating them with an antiseptic, the object being so to alter the tissue as to render it unfavorable to the growth of germs. Copper sulphate, tannic acid, formic aldehyde, hydronaphthol, dehydrated potash, and alum are examples. The mummifying agent which I have used is from the formula of Dr. Soderberg of New South Wales. R—Alum exsiccatum, thymol, glycerin, of each equal parts; zinc oxid, to make stiff paste. It is to be understood that aseptic conditions are essential, and therefore the practice is to be confined to the treatment of freshly exposed or uninfected pulps. The pulp is devitalized by means of arsenous acid, and under aseptic conditions the coronal portion is removed by an engine bur. The coronal chamber is cleansed and dried, the mummifying agent under slight pressure is placed in direct contact with the amputated radicular portions, and the whole sealed with oxyphosphate cement. In some cases, due to the action of dried alum, there is discomfort following the treatment, which subsides at the end of one or two days, and the result in my experience has been absolutely satisfactory. In but one tooth so treated have I had to remove a filling and retreat, which I attributed to faulty application. Within the last fortnight I have examined several of my cases without in any instance observing any abnormal condition of the pericementum or overlying gum tissue.

F. D. Lamb,
Dental Record.

REFLEX NEUROSES OF DENTAL ORIGIN.

W. J. Lederer, in *American Medicine*, calls attention to the fact that often reflex neuroses have their origin in diseased conditions of the teeth.

Dental conditions, such as are liable to act as causative factors of neuralgia, are numerous; they may be classified as:

1. Conditions in which the dental organs causing the malady indicate a pathologic or abnormal condition, as: acute or chronic pulpitis; chronic pericementitis (dental periostitis); exposed dentin; caries; abnormal position of teeth (overcrowding); foreign bodies in the pulp cavity; pyorrhea alveolaris (Riggs' disease); foreign bodies in the gums or alveoli; injuries produced by extraction; atrophy of the gums.

2. Those conditions in which the dental organs causing the malady do not indicate a pathologic condition, as: Exostosis; impacted teeth; pulp stones.

3. Then we have "neuralgia of the edentulous."

Just as the causes of dental reflex neuroses vary, so unlike are the resulting affections of dental irritation. These can be divided into:

1. Conditions producing disturbances of the peripheral organs, namely: (a) The eyes, (b) the ears, (c) those producing muscular disturbances, (d) those producing visceral disturbances, (e) those bringing about trophic and vasomotor changes.

2. Conditions producing disturbances of certain nerve and nerve centers, namely: (a) Facial and other neuralgias, (b) those producing pareses and paralyzes, (c) those producing tetanus.

3. Conditions affecting the cerebral centers, namely: (a) Headache, (b) hysteria, (c) epilepsy, (d) chorea, (e) insanity.—*Med. Standard.*

its mission; is it not reasonable to suppose that all organic substance in its path must be scattered in some direction, presumably towards the odontoblast and pulp? Secondly, the dentin being elastic and with this enormous pressure back of it, it becomes a reasonable deduction that in teeth where fibrillae, and the solution should meet with an extra amount of resistance, that it would be possible for the dentin to expand towards the pulp and help to produce an irritation. This can readily be understood by studying the histological construction of the pulp.

The arterial supply of the pulp enters the apex of the root, which subdivides, and the vessels lose their muscular coat at an early period of subdivision. The capillaries which lie beneath the odontoblastic cells join veins of larger size in which the middle coat appears to be absent. Is it not evident, then, that should pulp arteries and veins lacking this muscular coat be subjected to increased intravascular tension, such would produce danger of injury to their walls and bring about hyperemia and inflammatory conditions. This condition is imminent and cannot be disputed. Of course, it remains to be proven that this slight mechanical disturbance, as stated, can bring about this condition. To me it is possible and probable. In the application of this method it is necessary to drill a small pit into healthy dentin, and this I have not been able to accomplish without causing some discomfort. Of course, the discomfort is so small, when taking into consideration the amount of pain you are able to obviate, that it is hardly worth considering.

D. H. Zigler,
Dental Summary.

HIGH PRESSURE SYRINGES.

These syringes are supposed to have a pressure of three thousand pounds to the square inch, after securing a perfect contact point and the solution is sent on

SOME THOUGHTS ON DENTAL BOOK-KEEPING.

By Raymond J. Wenker, D. D. S.,
Milwaukee, Wis.

No business can be a success without a well regulated system of bookkeeping. It is the very heart of the business and the essence of success.

In developing a system suitable to dentistry it is important to study the commercial requirements of the profession.

The most important requirement is an accurate and detailed record of the services rendered to each individual. One purpose of such a record is to facilitate the collection of bills for services rendered. Another purpose is to protect the practitioner against derogatory claims made by his patients regarding the condition of his work in their mouths. By this means he is enabled to sustain his reputation for doing skillful work.

In the course of a few years these records will prove to be very valuable data by means of which the practitioner may ascertain the lasting quality of his work under various conditions.

Incidentally such a record may serve as a means of identification of patients in case of a catastrophe.

The second important requirement is a system that will enable the practitioner to make an accurate and detailed record of each operation with the greatest economy of time and space possible.

A system designed to meet these ends must have the teeth arranged in straight lines and their axial surfaces represented by belts or zones surrounding the occlusal surfaces. (Fig. 1).

This gives the most compact arrangement possible and at the same time, perfect facility for outlining fillings. Following this the teeth should be designated with a simple and systematic notation; i. e., a notation that does not require any effort to memorize and one that does not vary with each individual record.

The teeth are naturally divided into right and left, by the median line and into upper and lower by the occlusal line. (Fig. 1.)

Since there is an equal number of teeth in each of these divisions, and the denominations of teeth in each division are the same, only eight characters are necessary for the permanent set and but five for the deciduous. The only characters in use which do not require an effort to remember their consecutive order are numerals. Therefore the simplest notation that can be originated is the one illustrated in Fig. 1.

Special attention is called to the manner of using this notation as shown on the left of this illustration. To further facilitate the making of minute records in abbreviated and concise form, the system should be provided with a well selected series of column headings.

The headings which seem to the writer to meet the purposes of dentistry to the best advantage, are those illustrated in Fig. 2.

COLUMN HEADINGS.

The name of the party responsible for the payment of the bill should be placed above the account and the individual for whom services are rendered should be noted in the "For Whom" column. (Fig. 2). Thus the accounts of an entire family or institution may be kept together instead of having them scattered throughout the book. This will save a great deal of time and space in handling

TEETH.

- Upper right central.
- Lower left first bicuspid.
- Upper first molars.
- Central & cuspid, only.
- Central to cuspid, inclusive.
- 32 teeth.
- numerals for deciduous teeth.

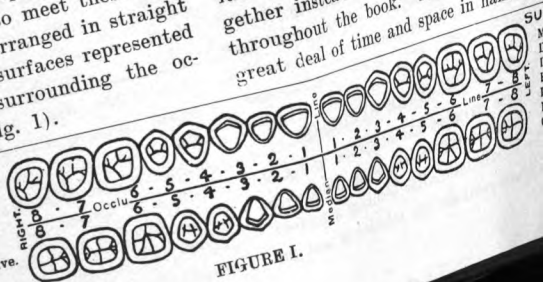


FIGURE 1.

Mr. Frank Kramer Res 12 Wells St. R. Thos. Erving
 Copyrighted by R. J. Wenker. PUBLISHED BY THE WENKER DENTAL MFG. CO., MILWAUKEE, WIS.

FOR WHOM.	DATE.	TREAT.		CROWN FILLINGS.					ARTIFICIAL.			Regulating.	Hours.	DEBIT.	Date of Rendering Bill and of Pay.	CREDIT.
		Scal. & Pol.	Extracted.	Local.	System.	Root Filling.	Gold.	Amalg.	Inlay.	Cement.	Gutta-P.	Combination.				
1905															1905	
himself	Jan 2				R		3 rd								60.00	Feb 1
George	" 4	✓						16 ⁰⁰				H ²		3	18.00	" 10
Moe	" 7		8-8		gas										10.00	
"	" 10														20.00	
David	" 21	✓						57 ⁰⁰							25.00	
Zitta	" 27		TV								IV ⁰⁰			1/2	2.50	

FIGURE 11.

accounts of this kind and will obviate the danger of overlooking any account when issuing a receipt.

Therefore this is the most important heading in the entire list, and since it is one which will receive first consideration in reviewing a record it should be placed first in order.

When the accounts of an entire family or institution are placed on one page the fillings should not be outlined on the diagram of the teeth because several members may have fillings in the same location. Every skillful operator has a uniform system of cavity preparation and therefore fillings can be satisfactorily designated by the use of initials indicating the surfaces involved. (See "Surfaces," Fig. 1 and Sample account Fig. 2.)

Generally in beginning with a new patient the first operation should be scaling and polishing, extracting roots hopelessly diseased, or treating troublesome teeth. This should be done to prepare a clean field in which to work. These headings should therefore appear the next in order after the date. This plan of logical sequence is closely adhered to in the entire list of headings illustrated in Fig. 2.

As the "Inlay" column is frequently called into use I would suggest that porcelain and gold inlays be differentiated by use of initials "P" and "G" respectively.

The "Combination" heading is intended for fillings comprising two or more materials. These may be designated by their respective initials.

The same principal may be applied to many of the other headings in the list (Fig. 2).

I will call special attention to one other heading and that is "Date of Rendering Bill and of Payment." Each time a bill is rendered the date should be written with pencil in this column and when a payment is made the penciled dates may be erased and date of payment inserted with ink. This is a very valuable column because it obviates disputes, economizes space and will serve as a memorandum in case of litigation.

Should it be desirable, at any time to record remarks, these may be inserted in the same line in which the operation is itemized.

There are three index systems of book-keeping in vogue, namely: the Stationary Leaf, the Loose Leaf and the Card System. Each of these should be equipped with forms shown in Figs. 1 and 2. In selecting a system it should be borne in mind that the greater the volume of business, the more important becomes the collection.

The Stationary Leaf has the advantage in being the cheapest, both in primary and secondary cost. The main objection to this system is that individual records, in the course of a few years become

have received a smattering of medical education. Do you wonder why we are so looked on?

I am sure it was a great mistake when dentistry branched out for itself, and I am afraid the day is far distant when we are going to shake hands with our brother medicos and be licensed by a medical board, although I hope the day will soon come.

You ask the question: Why should a dentist be a physician? First, because he would have an accurate knowledge of medical science, and would be able to cope with many diseases, and recognize many conditions of which he was ignorant before. Second, when he sees his patient he will recognize his condition, note the condition of the heart, pulse, etc., or whether a contagious disease be present. Third, the benefits from the training he derives and the advantages his knowledge is to his patients.

The advantages of the physician-dentist, as I may term him, are as follows: Being an M.D., he is on a rank with all medical men, providing he is a graduate of a regular recognized medical college and a licentiate of the State in which he practices.

The prestige which goes with the degree is of value not only in the medical profession, but also in the dental. One's knowledge being superior, one's work and one's fees will be superior. People will willingly pay more for the services of one in whom they place much more confidence.

Are not these sufficient reasons for a broader medical education? I am sure that if dentists had the opportunity and could spare the time they would most certainly take a medical degree.

In ancient medicine the physician practiced the dental specialty. In an old manuscript consisting of over 100 pages a most interesting account of the anatomy, physiology, medicine, materia medica, and therapeutics is given. The following are examples of some of the aphorisms given in the manuscript:

"There are three bones in a man's body which, when fractured, will

never unite again, and neither of these exists when a man is born, namely, a tooth, a knee-pan, and the os frontis.

"To extract a tooth without pain. Take some newts, by some called lizards, and those nasty beetles which are found on ferns in the summer-time. Calcine them in an iron pot, and make a powder thereof. Wet the forefinger of the right hand, and insert it in the powder, and apply it frequently to the tooth, refraining from spitting it off, when the tooth will fall away without pain, it is proven."

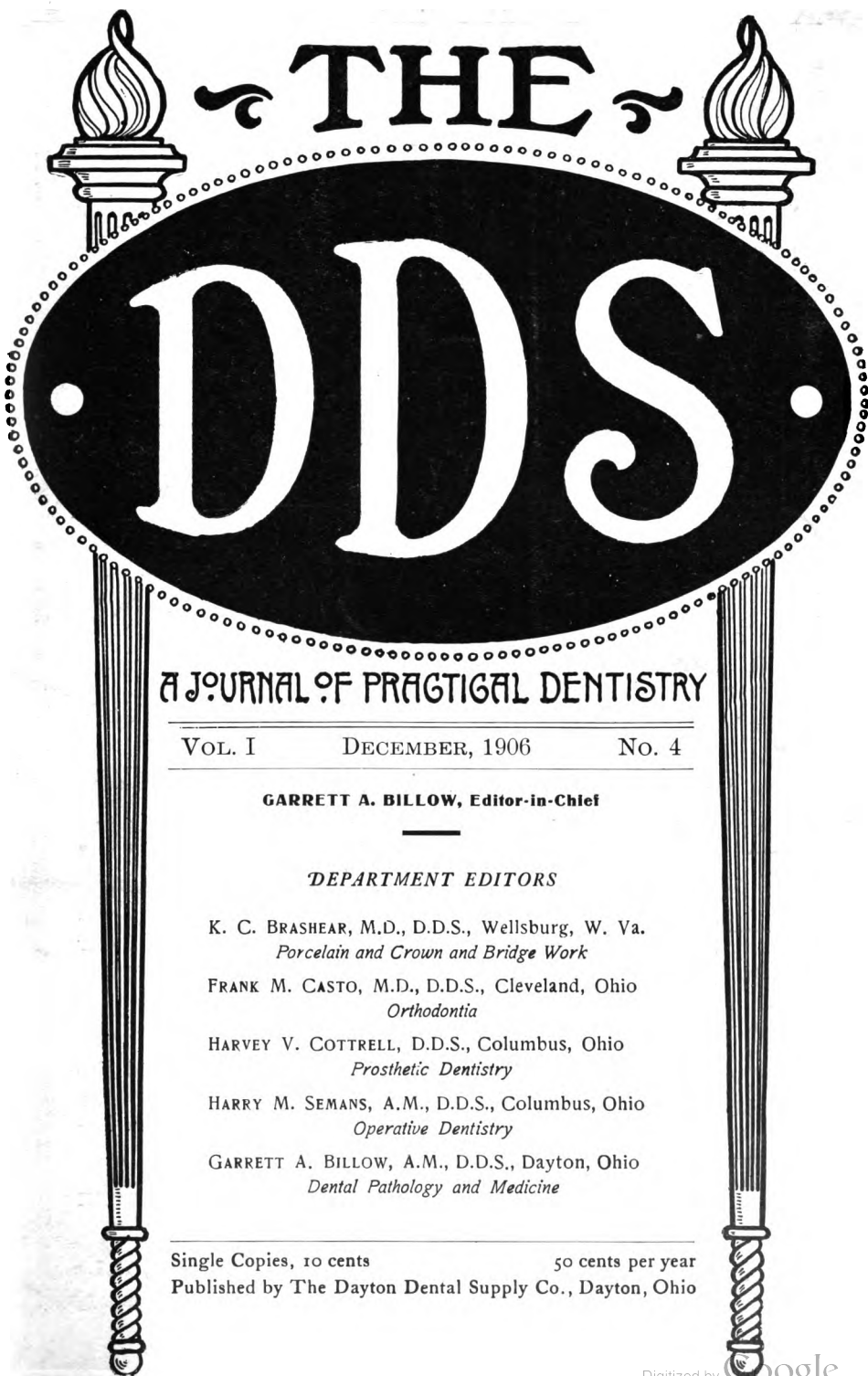
Bleeding and local applications, such as poultices and counter irritants, are frequently alluded to. The exact date of the manuscript is not known, but it was probably written about the end of the fifteenth century. So you see, the early physician practiced this specialty also.

Dentistry is one of the oldest professions, dating from the time when people were placed in front of the temples in order that they might gain relief. All down through the different ages, literature has been contributed by the different observers.

Dental surgery has always been associated with education and scholarly men, and not with mere mechanics or tonsorial artists.

Our literature of the present century is elegantly written and illustrated with beautiful pictures, giving in detail the different oral deformities, and the modes of treatment by surgical or mechanical means. In our own United States there seems to have been in the last fifty years a very rapid growth and high degree of development in dental science, as compared with other countries. The percentage of qualified persons practicing dentistry is fully as large as those in other similar callings of life. It is stated that after five years only about 20 per cent. remain in practice, and that the qualified and successful are only about 5 per cent.

Dentistry as a science and art is a noble calling and is worthy of the best efforts and of the finest minds.—C. W. Knowles, Dental Digest.



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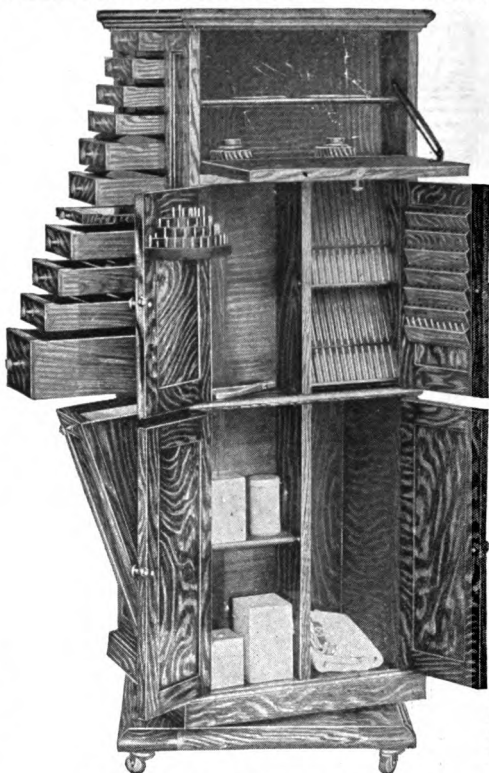
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* *

ADVERTISING ANNOUNCEMENT.

We believe that the matter of supplies used by the dentist is of interest equal to that of the methods by which they are employed, and we will endeavor to introduce in these pages from time to time such new materials and devices as may be developed, as well as all standard specialties.

We will, however, allow representation to none but reliable goods, which, to the best of our knowledge, will give satisfaction to the users.

WORK.

Man never got a much better message than that which told him he would have to earn his bread by the sweat of his brow. The record of events preceding the delivery of that message proves that he could not appreciate the good things when they were his for the asking; and the long record of events following the receipt and application of it proves that he has been able to appreciate the things he had to work for, when he did the right sort of work in the right way. The chief trouble about man and manual labor has its root in the unfortunate fact that a great many men—I am almost tempted to say a majority of men—begin wrong by making no attempt to find out what is the right sort of work for them to do; and keep on in the wrong by not doing their work in the right way. There are thousands of persons in the world today who are clinging to the rocky sides of steep mountains and making vain attempts to reach coveted summits, who ought to be working away in the pleasant and fruitful valleys below, content with what was intended for them and not trying to rise in the world by getting a seat on the hilltop.—Selected.

* *

DENTAL SOCIETY NOTICES.

We will be pleased to furnish space, without charge, to any dental society that may have matters for publication. Such matters should be forwarded by

Porcelain and Crown and Bridge Work

K. C. Brashear, M.D., D.D.S.

SELECTING SHADES.

When we are studying a tooth for the purpose of selecting shades, the patient should be in an upright position. I have noticed that if the patient is reclined so that the light strikes at an angle the teeth seem much lighter than they really are. This study should be made early in the operation before the teeth have been allowed to dry, as this always bleaches. In handling the shade guide we should remember that the body in an inlay will be much thinner than the specimen in the guide, and consequently much lighter, hence a darker color should be selected than is desired in the inlay.—J. O. Wells, Dental Digest.

* *

METHOD OF MAKING AMALGAM DIES.

Amalgam dies have become very popular in the construction of gold and porcelain inlays, copes for crowns and for building up teeth that have decayed far below the gum margins with gold.

Take an impression with pink base-plate gutta-percha in the following manner: Moisten the tooth and cavity with glycerin. Soften the gutta-percha over an alcohol flame, being careful not to blister it, and force it into the cavity with a broad instrument. The glycerin will prevent the gutta-percha from sticking in the cavity. Flow a stream of cold water over the gutta-percha to harden; carefully

remove and if the margins are perfect mix a small quantity of plaster, build it to a pyramid on a glass slab, and invest the impression by forcing it down in the soft plaster with an instrument, being careful to have the plaster well up around the margins. When the plaster is hard, mix the amalgam. I prefer to use alloy in the form of shavings, or copper amalgam. The latter is better, as it can be used several times over by warming it until the mercury appears on the surface when it is mixed thoroughly in a mortar. Carefully pack the amalgam around the impression until it is well covered and then roll up a piece of unvulcanized rubber, about the size of a thimble, and wrap several thicknesses of rubber tape around this. Place it over the amalgam, insert in a vise, and squeeze out the excess mercury. Leave it under pressure three or four hours or over night. Then break away the plaster, remove the gutta-percha, and you will find a clean cut and polished die which is easily mounted in the swage and makes a perfect matrix.—C. J. Hadley, Dental Digest.

* *

MATRIX FOR JACKET-CROWN.

To most dentists the making of a matrix for the jacket-crown is a much-dreaded proposition. My idea is to make this matrix of platinum wire which is a little heavier than the ordinary platinum wire used in the electric furnace. The idea of prepar-

ing the matrix for the crown is to wind the tooth with platinum wire in much the same way as a sailor would wind the end of a rope. This gives a cone-shaped matrix of platinum which is corrugated on the outside and on the inside as well. An impression is then taken in plaster or in modeling composition, pour up with any suitable investment material. The impression material is removed, leaving a spiral cone of platinum on the model, which can then be built up with porcelain and baked in the usual way. The model may be placed on the articulator and the piece broken off so that it can be tried into the mouth.—G. L. Hutchinson, Dental Brief.

* *

PREPARING PLATINUM FOR THE MATRIX.

In using platinum as a material for matrices, it is well to have it of at least two thicknesses—one the commercial, which is supposed to be 1-2000 of an inch in thickness. This can be annealed and oiled and folded together, and with a good set of rolls can be reduced to probably one-half its thickness, and is much better for small inlays than the heavier gage. Various methods for annealing have been suggested. One very good way is in the furnace, heating it up to 2,000 degrees or more, then allowing it to cool gradually. Another very excellent way is the oxyhydrogen blow-pipe, which heats it very rapidly and very hot, and is more convenient on account of the saving of time, while the result is equally as good.

The platinum which has been doubled and passed through the rolls for the purpose of reducing the gauge is glazed on the surface which comes in contact with the steel rollers, while

the other side has a frosty or velvety surface. The frosted surface should be placed in contact with the tooth, the glazed side in contact with the porcelain, as it strips from the inlay more easily than the frosted side.—Western Dental Journal.

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INDICATIONS FOR PORCELAIN BRIDGE.

There should be plenty of space for porcelain to get the required strength to withstand the force of mastication as we are entirely dependent upon its bulk for strength. Also consider the condition of the teeth to serve as abutments, their number and situation, the curve of the arch and most important, the length of bite.—O. M. LeCron, Dental Brief.

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CLASPS IN REMOVABLE BRIDGE-WORK.

The clasp should be as wide as possible not to interfere with the accu-sion or impinge upon the gum tissue, as the narrower the clasp, the closer it hugs the tooth; and the closer it fits, the more mechanical abrasion it causes; and the more abrasion, the more injury it does. The clasp should be sustained by frictional contact at a few points only.—Dr. H. J. Goslee, Dental Brief.

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MATRIX FOR PACKING PORCELAIN.

As we all know, the more dense we can pack the body the less shrinkage. In building up a large molar crown to be finished with one baking, I have been pleased with the following experiment: Having the pins gripped firmly in the proper holder, I cut a strip of sheet steel—of the thinnest sort, such as we use for matrices—

and pinched this together around the cap with a small screw vise. Then I oiled the inner surface of the matrix to prevent the porcelain from adhering. I was then able to pack the body of the crown very quickly and firmly, absorbing the moisture that was pressed to the surface from time to time with blotting paper. I built high enough to allow for prominent cusps, then released the vise hold upon the matrix. The spring steel let go, leaving a fine general contour and smooth surface. Then, after having cut away enough of the plaster teeth adjoining to allow about one-sixth for shrinkage, the tooth to be was placed in the articulator and cusps carved to shape. Any required special forms of contour were added with a brush. I am sure that I got less shrinkage and a considerable saving of time by this method.

I may add here that it seems to me that I get a good final surface with soft spunk, dry or slightly moist, upon the nearly dry surface of the body.—Garrett Newkirk, *American Dental Journal*.

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BACKING TEETH.

In backing teeth, too much care cannot be expended in producing as good a fit as possible. The pinholes in the metal should not be enlarged unnecessarily, as this is often the cause of a tooth cracking in the firing, owing to the solder running through between the tooth and the backing. The metal should always be kept flush with the edges of the tooth all around. This is most essential in bridge work, as backings have often to be relied upon for linking up. Another point in favor of the metal being flush is, that in the mouth, should

the incisive edges of a natural and an artificial tooth meet, there is less chance of fracture, since the backing undoubtedly takes up a certain amount of the strain. On the other hand, where there is a margin of metal almost an eighth of an inch from the cutting edge, the artificial tooth is, in my opinion, positively weakened.—Cosmos.

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EASY METHOD OF BAKING.

One of the most important items in crown and bridge work is that your backing fit the tooth perfectly, especially in the case of porcelain-faced crowns. How many of us have spent a quarter of an hour in burnishing a backing, and then found that it was far from being a fit? By a very simple device I have found that both time and patience can be saved.

Having ground the tooth at the back to the desired shape—which is invariably oval—take your Melotte's moldine and tray, dust the tooth with French chalk, and press it firmly into the moldine; draw away the tooth, and you will have an impress of tooth with the pinholes left by the pins. Take two pieces of steel, iron, or copper wire of about the same gage as the platinum pins, and insert them into the holes left by the pins of the tooth; pour the fusible metal; when set, draw away the die and you have a tooth-back with pins in position. Dust with French chalk and take the counter-die. You can now strike up the backing with no fear of breaking the tooth. By this method—which does not take more than three minutes—you secure a perfect backing, and it will take only one-third the time that it takes to bend up and burnish.—Cosmos.

ORTHODONTIA

Frank M. Casto, M.D., D.D.S.

THE IMPORTANCE OF PRELIMINARY EXAMINATION OF THE NASAL CHAMBER IN THE TREATMENT OF DENTAL IRREGULARITY.

The frequency of deformity in the dental arches, particularly that condition known as contracted arch, in conjunction with obstructed respiration, due to reduction in the respiratory space within the nasal chambers, and in the naso-pharynx, has been very forcibly impressed upon me during the past few years in my work in the hospital dispensary and during the examination of children for admission to a day nursery.

If we consider the mechanical forces active in the production of the contraction, we cannot fail to realize the importance of taking into account the frequent coincidence of these two conditions. This surprising frequency can hardly be considered pure accident, but is suggestive of a probable relation between the two conditions. This probability is advanced almost to a certainty, when from a physiologic standpoint we consider the mechanics of the muscle forces incident to the nasal obstruction and the resulting mouth-breathing.

During quiet nasal respiration the lips are closed, the teeth of the opposing jaws are in contact, and the tongue closely applied to the palatal vault and to the inner aspects of all the teeth. In this position the muscle forces are in a state of equilibrium, by which the teeth are maintained in their proper relations one to another.

The muscles of the tongue on the one hand and those of the lips and cheeks on the other, exert equal pressure upon each side of the dental arch.

In the presence of nasal obstruction and the resulting mouth-breathing, the mandible is depressed, increasing the tension of the tissues and muscles of the cheeks, the lips are parted and the tongue separated from the roof of the mouth and from contact with the aspects of the teeth. In this position the normal equilibrium is disturbed and unequal forces are brought to bear upon the teeth and the dental arches.

The logical result of this disturbed equilibrium follows. From lack of support on the inside and increased pressure from without, the tendency of the bicuspid and molar teeth is inward. Simultaneously pressure is brought to bear upon the anterior teeth, as a direct result of a lateral contraction, and in the absence of normal restraint from the lips, the anterior teeth advance and result in protrusion.

When we further consider that these forces are active, even in moderate degrees of obstruction, for at least one-third of the twenty-four hours, the strength of this power becomes evident, while in those cases where nasal respiration is impossible, and the disturbing force is continuously active, we are brought to realize even more forcibly the strength

of the distorting power with which we have to deal.

Under these circumstances all efforts directed toward correcting the oral deformity will be constantly antagonized, both during the period of active treatment and subsequent to the removal of all appliances from the mouth. The result under these circumstances will in many cases be failure to attain a permanency, the extent of return of the original condition depending upon the degree of the nasal obstruction and the age of the patient, it being greater in cases of marked stenosis and in young children.

Nasal Examination Recommended.

—This brief consideration of the state of affairs existing in many cases of contracted dental arch, indicates the importance and value of recognizing the probable coexistence of intra-nasal deformity and obstruction in many, if not in all cases of dental irregularity.

I believe from the standpoint of the rhinologist, that it is not going too far to state that thorough intra-nasal examination is indicated and should be required in all cases presenting oral deformity, and that the time has come when all who undertake the correction of irregularities of the teeth should be familiar with the anatomy of the nasal chambers and with their gross pathological changes, and should possess a working knowledge of the signs and symptoms of these conditions. For it is only by aid of this knowledge that we shall be able to detect their presence, to note the frequency of this coincidence, and to realize the importance of their relation.

It is not too much to expect the competent practitioner of dentistry to

be able to test the functional capacity of the nose in patients presenting for treatment, and to question the patient or parent concerning possible disease within the nose. Such data can be gathered in a very few minutes, and, properly used, will quite accurately determine for or against the necessity of preliminary treatment at the hands of the nose and throat specialist.

The occurrence of even a single one of the recognized symptoms of nasal obstruction should be enough to arouse suspicion and call for a thorough examination.

Symptoms of Nasal Obstruction.—

Briefly enumerated, the signs and symptoms to be looked for are as follows: Most frequent and characteristic is mouth-breathing during all or part of the time, with noisy respiration or actual snoring at night. Restlessness during sleep with a tendency to awaken and call for water to relieve the extreme dryness of the mouth. Advanced cases will show a characteristic face, easier to recognize than describe, with blunted mental activities, backwardness at school from no apparent cause, and more rarely a history of nocturnal enuresis, or night terrors, may be developed. Chronic cough, which is slightly productive and which becomes worse in winter and during periods of damp weather, is present as a rule.

As already stated, a knowledge of the fundamentals of rhinology, so far as anatomy and symptomatology go, will prove of great value to the dental practitioner who is active in the field of orthodontia. Such knowledge intelligently applied will surely add to his measure of success in this particular field of dental science.

The difficulties in the way of acquiring a knowledge are not great, but are within the reach of all who will study and investigate this important and fascinating branch of medicine.—F. A. Faught, Items of Interest.

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A CASE OF REGULATING AT FORTY.

I do not present this report to the profession with any presumption at speaking as an authority on the subject of orthodontia, but simply as one who is greatly interested in the subject, and from a desire to record some gratifying results.

In October, 1905, Mrs. K. came to me presenting the following condition: The upper left canine was absent, it having never erupted, and as a consequence the upper left central and lateral incisors moved distally, causing the hideous space between the two central incisors and giving a one-sided appearance to the face.

Considering her age, I was a little doubtful if success would follow an attempt at correcting the deformity, but I saw no reason why the teeth could not be moved under gradual stress carefully applied.

I therefore proceeded to band the left central incisor, soldering to the band a small tube running parallel to the long axis of the tooth. Then the right lateral incisor was banded, and to the band a tube was soldered running horizontally or mesio-distally. A traction screw was then fitted into the tubes with the nut on the distal side of the lateral incisor. In this way I availed myself of the resisting power of the right lateral and central incisors, thus drawing the left central into place without changing the position of the other teeth. Owing to the age of the patient great

care was used to move the tooth very slowly, as otherwise an inflammation might have resulted. It required about two months before the central incisor was in its proper place. It was wired firmly to the other teeth while the lateral was being moved to place, which movement required about six weeks.

This was accomplished in the same manner, the only difference being that the traction screw was used with pushing force, by having it attached to the bicuspid, in order to prevent the other teeth from being under too great a strain.

The force in each case was applied about midway between the crown and the root, the tubes extending slightly above the gingival border in order to bring the teeth bodily through the process and to prevent any unnatural tipping of the crown. A bridge was then made consisting of an artificial canine, to act as a retaining appliance; another bridge was inserted on the right side and the patient was discharged.

Another peculiar feature of this case was the presence of a small, hard swelling on the palatal surface immediately behind the left central incisor. This enlargement upon being opened was found to contain the root only of the missing canine, the crown having been absorbed by the tissues.

In view of the age of the patient it was deemed advisable to disturb as little as possible the relationship of the two arches, and while in the case when completed the occlusion was far from being perfect, the result of the treatment above outlined can justly be regarded in the light of a success, as the patient's facial appearance was greatly improved.—A. K. Janson, Cosmos.

PROSTHETIC DENTISTRY

Harvey V. Cottrell, D.D.S.

THE DENTIST MUST BE ARTISTIC.

Although mechanical principles must form the basis of all prosthetic work, the result will be in a high sense a failure unless the effect is an artistic success. Therefore the dentist must be artistic to satisfactorily supply dental substitutes. It is not enough that the plate fit; that the teeth be so perfectly ground to the plate that the joints be indistinguishable, and the plate finished so smoothly that the tongue can find no fault with it; all these things should be, and something more. Life and nature must be imparted to it, or the dentist will fail to obtain the highest possibility in dental prosthesis.—C. S. Butler, Dental Cosmos.

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ON THE COMPRESSION OF PLASTER IN CLOSING FLASKS.

The operator should thoroughly appreciate the amount of compressive force the brand of plaster he is using will resist; also the power of the screw with which he closes the flask.

French's regular dental plaster will show an appreciable compression when two hundred and fifty pounds are placed upon a circular surface one-half inch in diameter, or a surface equal to the occlusal surface of a molar tooth, and one thousand pounds will compress the plaster about one-thirty-second part of an inch. When we consider that five or six thousand pounds may be unevenly applied upon the surface of a den-

ture while closing the flask, it is easy to recognize why many vulcanite dentures are warped so that they rock, or the teeth are too long upon one side and require grinding.

The pressure that is being used in closing the flask can be very easily estimated, because the screw is a combination of the wedge and lever, and its power is found by multiplying the circumference described by the lever by the pitch of the screw and subtracting one-fifth for friction, which will be a very liberal allowance. Thus, if one pound of power is applied to the lever four inches from the center of the screw, the circumference would be twenty-five plus inches, which is multiplied by the pitch of the screw. There will probably be ten threads to the inch or one-tenth pitch, after deducting one-fifth for friction we will have two hundred pounds of force for each pound of power.—Geo. H. Wilson, Dental Summary.

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ALLOW NO CONTACT IN OCCLUSION BETWEEN THE SIX ANTERIOR TEETH.

In mounting teeth on the models, where normal occlusion is assured, the common practice is to allow the incisal edges of the lowers to lock just inside the lingual surfaces of the upper teeth, instead of leaving a space of from one to two lines between these two points to allow for lateral play during the incisive function.—E. M. Kittig, Dental Digest.

CONTROLLING A HYPERSENSITIVE PALATE.

I was once advised by a physician to use Chloretone in such cases. After giving the man the following doses of Chloretone I was enabled to take my impressions with no unpleasant symptoms whatever. I gave this man three powders of Chloretone, each containing five grains, and directed him to take them as follows: Upon getting up in the morning he was to take one powder; two hours thereafter he was to take another, and eat a very light breakfast, after which he was to take the last powder, and report to me. When he arrived at my office I gave him a very small dose of Chloretone, say two grains, and proceeded to take my impressions, as I have stated, without the least trouble.—A. E. Franklin, Dental Register.

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CAUSES OF FAILURE IN PLATE WORK.

Causes of failure may be attributed to the following:

Imperfect impressions.

Incorrect bites.

Faulty articulation.

Neglect in equalization of pressure upon the hard and soft tissues of the mouth.

Too much rubber in packing, preventing the two halves of the flask from coming completely together, thus destroying articulation.

Excessive pressure in closing the flask, causing spreading of the cast.

Careless and insufficient trimming of the plate.

Lapse of too much time between extraction of the teeth and insertion of the plate.

Failure to promptly collect the fee.

On the patient's part:

Failure to promptly pay the bill, resulting in lack of coöperation with the dentist.

Neglect to return for the correction of articulation and impingement upon the soft tissues.—J. Maurice Crosby, Dental Summary.

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ART IN DENTISTRY.

Art in dentistry distinguishes itself as work which is done for the love of it, and every artistic dentist places upon his work his own label, giving an index of his individual character.—James W. Hull, Dental Brief.

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REMOVAL OF VULCANITE FROM PORCELAIN TEETH.

Cover the bottom of an iron ladle, such as used for melting lead or sinz, with a layer of dry plaster of Paris; lay the teeth to be cleaned on the surface and sprinkle dry plaster over, completely covering them; place over a big Bunsen flame in draught chamber or in coke furnace, and heat to redness. Then cool down gradually, when, on removal, the teeth should be found perfectly clean.—Dr. W. T. Finlayson, Record.

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THE SEPARATING SURFACE ON PLASTER IMPRESSION.

The object is to give a smooth and glazed surface without an appreciable thickness being added to the impression, or a material that will attach itself to the cast which is to be formed.

The best results are obtained by coating the maxillary surface of the impression with a solution of shellac (three ounces of gum to a pint of alcohol). This varnish will penetrate the plaster of the impression, partially fill the pores, and make a good line

of demarcation to aid in cutting away the impression from the cast. In two or three minutes the shellaced surface is varnished with a solution of sandarac (three ounces to the pint of alcohol). Should the impression not have a well-glazed surface, in five minutes it should be given another coat of sandarac.—Geo. H. Wilson, Dental Summary.

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TO TRUE THE CARBORANDUM.

To true lathe grind-stones, hold a piece of chalk lightly against the revolving stone, using a hand rest so that the chalk touches the bulging part. Hold the chalked part of this stone against another revolving stone in the lathe firmly with a hand rest, thus truing one stone with another.—Will S. Payson, Items of Interest.

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SALT BAGS IN THE LABORATORY.

Keep one of these bags for waste rubber dam; when you have filled it give the whole thing to the small boy. He will effect a sale at a good figure, thus keeping his "pin fund" in a more or less plethoric condition.

Reserve another for the scraps of soap that accumulate rapidly and expensively in the would-be clean office. When rolled tightly in the bag they "suds" readily and make an ideal cake for hand washing after handling flasks, bolts, and other dirt-imparting appliances of the outfit of the dental laboratory.

Have one also for scrap wax. When filled, tie the neck of the bag and immerse in hot water. The wax filters through the mesh, leaving extraneous matter within the bag, which may then be committed to the furnace or ash can.—Dental O. and Lab.

ADAPTATION OF THE PLATE.

Denture retention depends upon *adaptation* rather than *fit*. The plate must lie close to the hard parts of the mouth but rest definitely on the softer and yielding portions; each case has a peculiarity unto itself and no definite rule can be formulated. I have found it an excellent practice to place powdered rouge on the parts when the tissues are soft and yielding; when followed up with the plaster these parts are found marked; coating them with more rouge the model will be likewise marked and should be scraped to the depth indicated by the tissues; if pronouncedly soft, remove considerable; if less so, remove accordingly.—B. J. Cigrand, American Dental Journal.

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TO CLEAN PLASTER BOWLS.

When plaster has been left in the bowl till it becomes hard, pour boiling water in the bowl and allow it to remain for about two minutes. The plaster can then be easily detached, in most cases without the aid of a spatula.—Abraham M. Waas, Dental Review.

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DEFECTIVE METHODS.

Rubber plates are too often inadequately vulcanized. They are made thick and clumsy, with little or no regard to the comfort of the patient and not much conception of the stress to which they will be subjected in use. Then they are vulcanized in the shortest possible time, and insufficiently to produce a hard and dense structure which will not absorb the secretions in which they are continually bathed. Many times the plates have degenerated under the rapid and excessive application of

the heat, producing apparently perfect plates on the surface, but within a sponge, and in case no proper care has been taken to provide constant spring pressure while vulcanizing, the rubber draws away from the teeth while hardening, leaving spaces which soon fill up with secretions to ferment and irritate the mouth, and it may be to cause a nauseating odor which no ordinary disinfection or cleansing will eradicate.—N. S. Hoff, Dental Digest.

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CLASSIFY YOUR ARTIFICIAL TEETH.

The prosthetic dentist should keep his stock of artificial teeth in separate groups corresponding to the different temperaments, so when his assistance in providing an artificial denture is requested, he can find immediately the group from which to select, after satisfying himself as to the applicant's temperament. What a convenience it would be if the dental supply companies would do likewise! —R. W. Tenner, Dental Summary.

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TO CLEAN WAX.

After melting and straining, boil the wax for twenty minutes in solution of half-ounce oxalic acid to each quart of water. Old wax may be made cleaner than new. Two drops of oil of cassia added to each pound keeps wax aseptic and renders it less unpleasant to the patient.—Thos. Fletcher, Pacific Medical Journal.

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SEPARATING MEDIUM.

A good separating medium is made by dissolving paraffin in gasoline. Put in all that the gasoline will take up. To use, spread solution over impression lightly with a camel's-hair brush. —Hints.

TAKING IMPRESSIONS.

In cases that are easily nauseated I have found that sponging the mouth with hydrogen dioxide, followed with a three per cent. solution of eucain over the palate, will enable one to take an impression in the most sensitive case.—F. B. Hartzell, Texas Dental Journal.

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TO CLOSE FLASK.

In closing flask, close front first to push rubber back. If you close the heel first you are liable to push the rubber used as a base forward and force out your pink rubber.—L. W. Jordan, Dental Summary.

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THREE RULES FOR ARTICULATION.

Three rules cover essentially the ground. Never allow pressure on the six anterior teeth; never, in full upper plates, allow the pressure to be greater on one side than the other; never allow a second or third lower molar which has projected forward so that its face shows to meet an artificial tooth at that angle, as it will surely crowd forward the upper plate, the same as the meeting of the anterior teeth.—Australian Office and Laboratory.

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LAP THE METAL PLATE IN FRONT.

In swaging a gold or a platinum plate do not hesitate to slit the front and lap, because it facilitates swaging, and there is no possible objection to it. On the other hand, it is a real advantage, because many a gold plate has broken through this, the weakest part of the plate, so that by cutting, lapping, and soldering, it is strengthened one hundred per cent. —L. P. Haskell. Dental Brief.

TO INSURE FLOW OF VULCANITE RUBBER.

My present practice is to employ a mixture of one part benzine and two parts alcohol, dipping the rubber in this mixture, before packing it, and closing the flask with the additional aid of hot water. This does not appreciably retard vulcanization, and it makes flask closure a much easier operation. If, however, there is the slightest opening at a point, the rubber will penetrate it.—Dental Office and Laboratory.

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THE CLASP.

The clasp is often condemned, and in many cases justly, because it injures the tooth. This fault, however, is not in the clasp, but the manner of its adjustment. It is often adjusted to a plaster cast, which should never be done, but in the mouth. Then it is often soldered solid to the plate as far as it comes in contact with the plate, so is perfectly rigid, and with these two conditions combined no wonder there is trouble, loose and sore teeth.—L. P. Haskell, *Dentist's Magazine*.

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VULCANIZING RUBBER.

I believe that the majority of rubber dentures are vulcanized at too high a temperature and in too short a time. A denture should be vulcanized at 280° or 290°—depending upon the rubber—for three hours after the vulcanizer has reached that point. In that time a thick lower denture can be vulcanized solid; you can saw right down through the mass and polish the cut surface, but you cannot do that if vulcanized at 320° for fifty-five minutes approximately.—Dr. Gritman, *Dental Cosmos*.

TO ADJUST A BROKEN PLATE.

To adjust a broken upper or lower plate take two flat pieces of modeling compound. Heat one piece and place over the cold one. Then press the teeth of plate into this and adjust the fracture. Cool the compound and pour plaster into plate. The idea of using one cold and one heated is to prevent contraction. Another method is to use a matchstick, attaching it with hard wax to the posterior teeth, then adjusting the fractured plate, waxing over the fracture and pouring impression.—*Stomatologist*.

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REMODELING OF ILL-FITTING VULCANITE DENTURES.

The method consists of flasking the case in such a way that it can be removed bodily from the flask for the purpose of removing the teeth from the vulcanite and putting them back in the flask, thereby getting rid of the old vulcanite altogether. An impression of the mouth is taken in the usual way, either in plaster or composition, and cast. The case is then tried on the cast. It may not go on at all, or be so wobbly that it will be difficult to discover what position is the correct one, but all one has to do is to cut away freely any excrescences or edges or rugæ that are in the way. If I have any difficulty in seeing what is keeping it, I wriggle the case slightly on the cast and cut it away at the white plaster marks that are left on the under surface. The great thing, I find, is (in the case of uppers) to get the palatal portion of the case lying as flat as possible, for if this be right it is certain that the rest is, as it is not in the palate where changes occur in the mouth. All this can be done in

a few minutes. The case is next waxed on to the cast and wax run into all the places to be filled up, but it is not necessary to have wax all the way under the case, as the edges are tight, to keep plaster from running in between it and the cast. Any teeth that require to be added are put on with wax, and any places where it is desirable to extend the case or add gum are waxed up. It may also be necessary to cover exposed pins, etc. The cast with the case on it is then placed in the lower part of the flask, and plaster brought up to the gum edge. The middle part of the flask is then lubricated inside with oil, vaseline, or soap and placed in position. Plaster is then run round the faces of the teeth and gum and crowns of the teeth. The plaster is then trimmed up, smoothed, and lubricated, the palatal portion which remains filled in with plaster, and the top of the flask put on. When the plaster has set and the flask has been opened, the case will be found embedded in a ring of plaster in the middle part of the flask; this having been well lubricated allows the plaster with the case to be removed. The ring of plaster is then broken into three or four sections and the case liberated. These sections of plaster are now put back into the middle part of the flask, where they were before. The top part of the flask is then put on, and the lower part with the cast used as the plug; or it can be packed the other way if desired. The teeth are then removed from the case and fitted into their places in the plaster. If the back teeth are diatoric and the vulcanite will not come out of the holes, I have found that a very good way is to place them in a crown or inlay furnace and burn it out. I

heat them till they are red-hot, when they will be found nice and clean.—
T. Evans Johnston, Dental Record.

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COLD WATER FOR RESINED IMPRESSIONS.

Some dentists coat plaster impressions with a solution of soap, to facilitate the parting of it from the cast; others use a varnish made of one of the resins dissolved in alcohol. To make impression and cast part company readily it is customary to throw both, while still in apposition, into water, preferably cold, except in those cases in which soap or other non-resinous agent has been used as a separating medium. If thrown into hot water, the heat, penetrating to the resin-coated surface of the impression, effects adhesion, with the result that one has two surfaces cemented each to the other, that part with difficulty and mutually roughen each other, leaving the surface of the cast pitted and scaled in some places and with bits of the impression adhering in others. The safe plan is to soak the pair of mixes for a few minutes in cold water when a resinous parting fluid is used; in hot or cold when the medium is non-resinous. As stated above, there is a quicker result when hot water is used, the heat playing an important part in tearing the pieces from each other.—D. O. & L.

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CLEANING IMPRESSION TRAYS.

Mercury and whiting, rubbed together and applied to impression trays after removing wax, plaster, etc., keeps them looking like new. This suggestion I received from Dr. McCulloch, of Perth, Ont.—A. W. Thornton, Dental Review.

OPERATIVE DENTISTRY

Harry M. Semans, A.M., D.D.S.

CAVITY PREPARATION FOR GOLD INLAYS.

In the preparation of the cavity for the gold inlay we must avoid all undercuts that would in anyway distort the matrix in its removal from the cavity, the walls must diverge slightly from the parallel. This is not made absolutely necessary to get the closest fit as with the porcelain, as there is no matrix to be stripped off from the finished inlay, but it aids removal of matrix from cavity.

Of course directly contrary to the principles of inserting the ordinary metallic fillings, the orifice of the cavity must be larger than the interior, a slight undercut is permissible at one side of the cavity if the other side is so beveled as to allow removal of matrix without distortion.

Inexperienced inlay workers often have had too much faith in the cement, believing in its ability to hold the inlay to a saucer-shaped cavity. Our scientific cement investigators and experimentors have not as yet given us that cement by which we can stick an inlay to almost a flat surface and make it stay there.

We find by experience that it is unnecessary to go to such extremes, we may easily shape our cavities with a view to just as much retention as it is possible to get. I never allow any chance to escape for getting more retentive form to secure all frictional holds possible by step cavities or otherwise which may assist in securing my inlay.

Be sure always to shape cavities by different walls and angles or by varied shapes of base so the matrix cannot move around, but will go to the exact place every time and cannot do otherwise.

All inlays should be so seated as to set on good flat bases and cavities so constructed that pressure will rather force the inlay into the cavity instead of out.—J. W. Lyons, D.D.S., The Dental Register.

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ANOTHER GOLD-FILLING INLAY METHOD.

All forms of gold, save our best modern mat golds, lose their cohesiveness when coming in contact with the freshly mixed cements. I use Keeton's gold, made in three thicknesses. The cement with which we have filled this cavity being still plastic we cover same with a piece of the thickest of Keeton's gold a little larger than the cavity. This gold being porous the surface when placed in contact with the soft cement becomes incorporated with the same. With large, ball-faced pluggers we "tease" this gold into the cavity, pressing from the center toward the edges. This pressure slightly condenses the gold and forces the excess cement out between the gold and the edges of the cavity. This gold should be so teased into place as to approximate the slight under cuts, without being brought into contact with the walls of the cavity. We now add other pieces of

the mat, pressing the same to place with hand pressure only, and with a positive pressure condensing the gold against the edges of the cavity in such a manner as to leave the thinnest possible film of the cement at this portion of the filling. If the enamel is very heavy, and you so desire, scrape the cement from the edges of the cavity, only to the depth of the enamel. We now have the cavity approximately half filled with cement, probably one-third of the remaining half is of the first layers of the heavy mat gold. We now use pieces of the medium gold or thickness; place same in position while quite warm, as this hastens the crystallization of the cement. With hand pressure only we condense this gold which coheres to the heavy gold previously placed. We now finish our filling with the thinnest mat, as this enables us to gradually bring the filling to, or beyond, the proper contour, working the same in close apposition to the edges of the cavity. The enamel surrounding this or any cavity is nearly as brittle as glass. I could lean the weight of my body against a window glass without breaking it, but should I strike the same a quick blow with a half-ounce steel instrument I would shatter the pane; so with the enamel at the edge of a cavity, strike it with a mallet of any kind and you have cracked, crushed, or disintegrated the same. With steady hand pressure we are enabled to put many times the number of "foot pounds" on a filling than would be possible with the mallet. The said "foot pounds," as no energy can be lost, must manifest itself in some form; with the mallet it might result in congestion of the peridental membrane, strangulation of the pulp at the apical foramen or

the pulverized condition of the walls or edges of the cavity. In this case the "foot pounds" applied with the hand pressure, a power compatible with the tissue surrounding the tooth, manifests itself in the form of density in the filling, which is aptly shown in the way a burnisher will slide over the wonderful dense surface of polished gold.—F. B. Lawrence, *The Dental Brief*.

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PREPARATION OF CAVITIES ON PROXIMAL SURFACES OF INCISORS AND CUSPIDS.

I will mention but briefly the methods of procedure in the preparation of simple cavities on the proximal surfaces of incisors and cuspids. It is of the utmost importance, first, to have ample space. No operator can do justice to himself or his patient without free access to the cavity. I need not dwell on this. There are only two methods or ways, to my mind, that ought to be countenanced on the sixth anterior teeth. These are by the use of cotton or waxed linen tape and the separator. The latter must be used with great care and judgment. Now begins the work of preparing the cavity. With sharp chisels break down all weak and unsupported enamel margins and so extend the boundaries labially and lingually as to have a filling that will be self-cleansing when finished. Remember, however, it is not necessary to extend the margins beyond the angles onto the lingual or labial surfaces, nor should there be any great show of gold, unless the cavity is a large one and these angles are found to be thin and unsupported by dentine. Then it may become necessary to extend well into the labial or lingual surface, or both. Another reason may be found in the fact that the

mesio-labial or disto-labial angle lies so close to the proximating tooth that the filling will show as a dark cavity, because the light does not reflect from the filling, and to prevent this, we may extend well over on to the labial surface. Bear in mind, however, "Extension for Prevention" does not mean large fillings; but it is better to have a display of gold than to have recurrence of decay or your patient embarrassed with a dark filling. After the outline of the cavity has been made, then, with the spoon excavator, proceed to remove the decay, not only a portion of it, but all of it. It has been claimed by some that it is better to leave a little decalcified tooth structure over the pulp than to expose it. My experience and observations have taught me that you will have trouble, sooner or later, as surely as you do it. Now cut gingivally to sound dentin, and under normal conditions of the gums in the inter-proximal space in large cavities, it is better to extend your cavity slightly under the gum septum, because of the well-known fact that you will not have recurrence of decay on that portion of the filling covered by healthy gum septum or gum margin. With the inverted cone bur make this wall as nearly flat as possible. If found necessary for retention, after the cavity is shaped, this wall may be slightly grooved. There are two other points in these large proximal cavities that must be carefully guarded and where "Extension for Prevention" must be practiced. These are at the gingivo-labial and gingivolingual angles. The cavity must be so extended at these angles as to also be self-cleansing or covered with gum tissue. Recurrence of decay is more often found at these localities than

at any other point of the filling. The incisal angle should be slightly rounded at the periphery and cut at right angles with the axial wall. It may be slightly grooved or inclined toward the incisal edge at the axial wall. This may be done with the excavator or an inverted cone bur. Now, if the labial and lingual walls are at right angles with the axial wall, which also has a plane surface, there need be no fear as to the retention of the filling. If in doubt, however, the axio-labio-gingival and axio-linguo-gingival may be slightly grooved with the inverted cone bur toward the incisal angle. The enamel walls are now smoothed with a coarse strip, the dentinal enamel margins slightly rounded, the cavo-surface angles beveled with a sharp chisel, and the cavity is ready for the filling.—A. A. McClanahan, The Dental Brief.

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**"WHAT GOLD FOIL ANNEALING
REALLY IS."**

It is well known that there is little difference between cohesive and non-cohesive gold, as it comes from the manufacturers, except that the non-cohesive has ammonia gas condensed on its surface.

They were both *purified*, *beaten*, and *annealed* in the same manner, but just previous to marketing a part of the lot is passed through ammonia fumes and marked non-cohesive simply because these fumes form an imperceptible film which, while not affecting the purity of the gold itself, prevents intimate cohesion of the different layers of gold. From this we may see that a pellet of cohesive gold may be made non-cohesive by exposing it to the influence of ammonia gas, and this pellet thus rendered

non-cohesive may in turn be made cohesive by driving off the gas with heat. This latter process is what we actually accomplish in our every-day operations with non-cohesive foil when we heat it and it is in no way intended to anneal the gold.

The "so-called annealing" of gold foil is not analogous to, nor in any way connected with the annealing of plate gold which has become hard by hammering and has to be raised to a red heat to relieve it of the state of strain. Much of the difficulty experienced by operators in the insertion of gold is undoubtedly due to faulty methods of giving it the heat treatment, and even among operators who are sufficiently skilled to obtain good results by the ordinary methods, there is much to be gained by adopting some of the more recent advantages that are afforded us in the use of the "so-called electric gold annealer." Most operators are in the habit of heating their gold by passing it through the flame of a spirit lamp, or a Bunsen burner, but in either instance we are never certain of always having a pure flame; besides, there is not one in a dozen that understands that he is removing gases and not developing cohesion, which is an inherent quality of the pure clean gold itself. To remove these gases uniformly and completely a comparatively low heat and more time is required and this is best accomplished with an electric annealer. It has been shown by experiment that the cohesive property of ordinary gold foil as it comes from the manufacturers shows itself at about 250 degrees F. and increases from this point to about 375 degrees F., after which nothing is gained. As this heat is not visible many dentists who have

not tried the gold annealer with its low heat believe that gold annealed in this way is not thoroughly annealed, but clinical use shows it to be most cohesive.—M. C. Ward, The Register.

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A PLEA FOR NON-COHESIVE GOLD.

It was indeed a pitiful mistake to abandon the use of non-cohesive gold, and now in our efforts to correct it many of us find it hard to get back to the right path. We cannot substitute unannealed cohesive foil for the old, true non-cohesive gold and make operations as lasting as those made by the old non-cohesive operators, such men as Harris, Maynard, Badger, Morgan, Redmond, Clark, and others. It is a pity that the G. V. Black Club, that brilliant coterie, cannot get back into the middle of the non-cohesive road, for it is *very, very difficult* to make a perfect adaptation of semi-cohesive or unannealed gold when rolled into cylinders, as Dr. Conzett describes. I do not say that it cannot be done, but I do not trust the method. I doubt my ability to do it. If a true non-cohesive gold, such as Charles Abbey's foil, were used in the manner he describes I could put my faith and trust in the work, for it does not harden under stress, does not cohere, but slides upon itself, spreading laterally so that the cylinders tighten each other. It is so soft and adaptable that no one need fail to adjust it to the walls of the cavity, and when thoroughly condensed it is more solid because more of it can be packed into a given space than any other form of gold.

I wish to make the assertion that a mass of true, non-cohesive gold conducts heat and electricity less readily

than a mass of equal density, composed of cohesive gold. This, I know, is difficult to prove because both are conductive, but clinical observation bears out the assertion, and it seems to me that it must necessarily be true, if the non-cohesive property is due to the presence of foreign matter upon the surface of the foil. This must act as an insulator breaking and hindering the passage of the current. I am aware that the statement that non-cohesive gold has a foreign substance upon its surface is prejudicial in the minds of many. I have noticed this especially with dental students when told by the advocate of cohesive foil that this form of gold is perfectly clean—that only absolutely pure and clean gold can maintain its cohesive property, that all non-cohesive gold has some extraneous matter upon its surface. The mind of the student is biased from this moment in favor of cohesive foil, of which he sees nine times as much worked as of the other form of gold.—L. G. Noel, *The Digest*.

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WHERE THE PORCELAIN INLAY IS INDICATED.

Experience has proved to most practitioners that the use of the porcelain inlay is without any advantages, if not entirely contra-indicated, in positions where heavy masticating strain is to be borne, which at once excludes its insertion in molar cavities, except they be buccal or occasionally mesial. The bicuspid proximo-occlusal, and especially mesio-occlusal cavity, if filled with gold would often result in glaring disfigurement; in such cases porcelain is our best filling agent, but should be used with an explanation to the patient that here its permanency is more a matter of doubt than would be

the case with gold—the improvement in appearance, however, warranting the slight risk undertaken. Buccal cavities in bicuspid are unquestionably best filled with porcelain. All classes of cavities in the six anterior teeth constitute the field in which porcelain finds its greatest application. This last statement brings to mind great proximo-incisal restorations upon incisors, the restoration of the incisal one-third or two-thirds of incisors broken away through accident or unusual decay, cervical cavities troublesome to fill with gold because of the difficulty attendant upon successful application of the rubber dam, those perplexing conditions presenting as a result of extended abrasion and sometimes calling for the wholesale building up of both the upper and lower anterior teeth—in short we may consider the porcelain inlay limitless in application in cavities of these teeth excepting those so exceedingly small and inconspicuous that needless sacrifice of sound tooth substance would be necessary in order to make a bit of porcelain of some size, inasmuch as tiny inlays are very difficult to fuse and carry successfully to the cavity and may be considered impracticable. Another exception would best be noted, that of the occasional case where the force of mastication is so excessive that even gold would be flattened or would give evidence of rapid wear. Porcelain has no place whatever in occlusal molar cavities when there is an antagonizing tooth, for its friability invariably results in a progressive chipping away of the marginal edges, resulting in a crevice and a ditch that plainly rules its use out of such positions, moreover the time required to complete a gold or amalgam filling or

perhaps gold inlay is less than that necessary ordinarily with porcelain. Esthetic requirements, though not often a consideration in these cases, must be ignored, for they are beyond the limits of present practice.—J. F. F. Waltz, *The Dental Review*.

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THE FINISHING TOUCHES IN CAVITY PREPARATION.

After the decay has been removed from a cavity, the axial or pulpal wall, as the case may be, should be trimmed to form. Until this is done and the cavity all prepared, the cavo-surface angle should not be cut. With the cutting of this angle the cavity should be given a toilet; that is, going over its entire surface with a piece of spunk to remove any small particles which the blast from the chip-blower has not removed. Then, and not until then, should the cavity receive its final examination. This examination should be made with the aid of a jeweler's magnifying glass. In ninety-nine out of every hundred cases it will be found that some correction of the cavity preparation is necessary. Make that alteration, make another toilet of the cavity, and if after another examination the conditions are satisfactory, the cavity preparation has been completed.

In what I have said to you are embodied some of the Fundamental Principles. The necessity for anchoring all fillings which we make in the buccal, lingual, and proximal surfaces at right angles to the cavity proper, provided direct stress will come upon them, is something which was settled years ago. The necessity for a flat gingival seat has long since been recognized as well as the neces-

sity for a flat step in the occlusal surface. These things are understood and followed by all advanced men. They have been before the profession for fifteen years or more, and intelligent men have long since stopped discussing them, for they know their worth in prolonging the life of dental operations.—E. K. Wedelstaedt, *The Dental Brief*.

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PRACTICE WITH THE PYROMETER BEFORE USING IT.

To the beginner in porcelain work who wishes to use a pyrometer, we would advise the fusing of porcelain buttons, making careful tests, and at the same time observing temperatures indicated by the needle and time occupied, making comparisons of color, bearing in mind that in proportion as the button is smaller the shade will be lighter than that of the shade guide. Do not try to obtain the maximum heat, supposed to be required, at first; rather get an underfuse and then work up to the correct results. Do not mistake the porous, burned-out appearance of an overfuse for an underfuse, and then put a useless strain on your appliance trying to make it come out right. This very common mistake among beginners is entirely avoided by the use of the pyrometer, as they are given warning by the point to which the needle advances. With this system, as with any other, no practical case should be attempted without this preliminary testing, and these tests should include various kinds of work before attempting any for a patient.—R. M. Petton, *The Register*.

Dental Pathology and Medicine

Garrett A. Billow, A.M., D.D.S.

SILVER NITRATE; CAUTION.

The use of silver nitrate in the mouth requires caution. In case of accident its action upon soft tissue can be almost instantaneously checked by promptly applying sodium chlorid, thus forming the insoluble silver chlorid. Extemporaneously, nitrate of silver may be prepared by dipping a silver wire into nitric acid and thus applying it to the tissues.—Hermann Prinz, Dental Digest.

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NITRATE OF SILVER IN TREATING PYORRHEA.

After the surgical operation we find the necks of the teeth extremely sensitive. Cold air hurts and it is extremely disagreeable for the patient; and there is nothing which gives relief like nitrate of silver. I keep a fresh saturated solution and apply it by means of shreds of cotton wound on an orange wood stick, protecting the gums and mouth with cotton rolls. The stain will wear off in a few weeks and the teeth will have recovered from sensitiveness.—J. D. Patterson, Dental Era.

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ARSENIC FOR PULP DEVITALIZATION.

I believe that in my practice, whether for lack of time on my part or on that of the patient, or for common sense reasons, I use arsenic in thirty to forty per cent. of the cases and I not only believe but know that in not more than one per cent. of these cases is there any pain or after-

trouble.—Dr. J. P. Root, Dental Summary.

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PRESCRIBING—IS THIS TRUE?

I claim that ninety per cent. of the dentists in practice to-day are not qualified to prescribe for two per cent. of the disorders met with in their daily practice, and few of them could give a list of the essential oils and how they are prepared, to say nothing of their effect on the tissues. A dentist will go to a drug store and call for carbolic acid and if asked what per cent. will be at sea. If asked why he uses oil of cassia or cloves and what effect he expects to get, he will answer, "Stop tooth-ache or disinfect a canal." His preceptor used it, so does he.—J. W. Penberthy, Dental Review.

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DISINFECTANT FOR INSTRUMENTS.

A good, cheap disinfectant for your instruments, or to whatever use you wish to apply it, is found in Lysol. It is a pure cresol product, containing the highest percentage of cresylic acid in a soluble and free state. It is a permanent preparation, non-toxic, makes a clear solution in water, is superior to carbolic acid and creolin as a bactericide and is less poisonous than either. A two per cent. solution is equal to a five per cent. solution of carbolic acid crystals. Lysol is suitable for general disinfection as well as for medicinal uses.—H. E. Davis, St. Joseph, Ill.

PULP CAPPING.

In many cases the capping of the dental pulp is good theory but poor practice. When the pulp is exposed from caries, and inflamed, the safest capping, as a rule, is a devitalizing agent left long enough that the pulp's life is destroyed, followed by its removal and proper replacement with some substance possessing both anti-septic and homogeneous properties.—Burton Lee Thorpe, *La Odonto-Stomatologia*.

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DENTAL PROPHYLAXIS.

First, every proximal surface of every tooth should be swept with floss to remove not only bits of food, but any colonies of bacteria that may exist. Second, the teeth should be brushed until they are bright and clean, a chalk or a chalk and pumice powder being used as often as necessary. Third, some mouth wash should be held in the mouth for two minutes or more to destroy or inhibit the growth of the microscopic bacterial film necessarily remaining after the floss silk. This procedure should be gone through morning and evening and is usually sufficient, but when an acid condition appears to exist in the mouth, the teeth should be bathed in milk of magnesia just before going to bed. I have not laid stress on agents for removing lump deposits, as I believe no efficient ones exist. Teeth can only be cleansed of deposits by scalers in the skillful hands of the dentist.—Dental Brief.

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THE GERM THEORY.

Erdl in 1845, Ficinus in 1847, Klenke in 1850, Leber and Rottenstein in 1867, and later Milles and Underwood, and Koch in 1881, had

all suggested the agency of micro-organisms in the production of caries of the teeth. It remained for Doctor Miller to prove the case conclusively.

He seems to have started out upon his experiments with a very clear conviction that germs were the active agencies in this disease. He first convinced himself, by the examination of thousands of slides of carious dentin, that micro-organisms were always present.

One of his first experiments was to fasten, upon going to bed, a tube, containing a mixture of starch and saliva, to the side of a molar tooth. In the morning the mixture was sour, showing that fermentation had taken place. The ptyalin of the saliva had first changed the starch to sugar, and afterwards germs had caused the mixture to become acid. He next heated the starch to 100° Centigrade, sufficient to kill any germ, and repeated the experiment. It soured as before. The saliva was then heated to near boiling, when the mixture with the starch remained sweet, thus proving that the germ resided in the saliva. By inoculating other culture tubes from the first he proved these germs to be reproductive. By analysis he found the acid produced to be lactic. No specific germ has ever been isolated as the active agency in the production of caries. Out of the fifty or sixty varieties to be found in most mouths there are quite a number which produce lactic acid. Out of eighteen examined by Dr. Miller, ten were lactic acid producers. This variety of bacteria depend for their growth upon the presence of carbohydrates, substances which are either in the form of sugars or are capable of being converted into sugars in the mouth.

Doctor Miller's crowning demonstration was the production of typical caries in an extracted tooth under conditions similar to those found in the human mouth.

He later made the important announcement that caries is produced by the action of two varieties of germs, or by the same germs acting differently in the different stages of the disease. First the Zymogenic bacteria or acid producers dissolve out the lime salts, after which the Saprofitic bacteria, or those capable of causing putrefaction, attack the organic matrix, breaking it down into the characteristic appearance of caries. The acid action always precedes the actual presence within the cavity of the germs themselves. Dentin which has been acted upon by the acid in advance of the germ is said to be "affected" and when the germ has entered into the dentinal tubules it is said to be "infected," a distinction of importance when determining what carious matter or semi-carious matter may be safely left covering a nearly exposed pulp.—H. B. Tileston, Dental Digest.

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DENTAL PROPHYLAXIS IN CHILDREN.

Our duty to our young patients demands that we vigorously push this work among them. Nowhere has dentistry been more hopelessly at fault than in the treatment of the mouths of children, and in no place has more trouble to the future masticating organs started than in the loss and lack of use of the temporary teeth. It is the cause of a very large per cent. of the cases of malocclusion, and there is no doubt but that prophylaxis will do more than anything else to prevent them. And as has

been pointed out many times, malocclusion is one of the great causes of disuse and consequent disease of the permanent teeth, and so results in the great need for prophylaxis in the permanent set.—C. A. Hawley, Dental Summary.

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A VERY EFFICIENT METHOD FOR ANESTHETIZING THE PULP WITHOUT THE USE OF THE PRESSURE SYRINGE.

Prepare the cavity in the usual way. Place a saturated pledget of cotton with cocaine solution directly over the pulp and fill the remainder of the cavity with a piece of vulcanite. Then take a short piece of orange wood, fit it into the cavity as prepared and direct the patient to bite down upon this with increasing force. In this way we can obtain a well-directed regulated force or pressure and with less discomfort to the patient and operator.

In our daily clinics we have succeeded in anesthetizing pulps by this method, after repeated attempts by other means have failed.—E. T. Loeffler, Dental Summary.

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CHRONIC ABSCESS.

In case of sinous abscesses in which there is only a sinous without much tissue degeneration around the apical end of the root, an agent that I have tried with considerable satisfaction is guaiacol carbonate, a combination of guaiacol and carbolic acid, the chemical formula of which is $(CO(OC^H_2OCH^2))^2$. This agent has antiseptic power sufficient to destroy the form of bacteria that usually enters into such processes, is little escharotic and a mild stimulant to the tissue cells. In the treatment of those cases in which a mild disinfectant is required and tissue stim-

ulation is indicated, this agent is one that is of value. It is also valuable in the treatment of certain antrum troubles.—H. B. Tileston, Dental Digest.

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IMMEDIATE ROOT-FILLING SHOULD NOT BE RESORTED TO IN CASE THE PULP IS REMOVED BY PRESSURE ANESTHESIA.

Two to five days should be allowed for a restoration of the equilibrium of the circulation in the surrounding tissues, especially the peridental membrane. An antiseptic dressing in the root canal will take care of any secondary hemorrhage of serum that may come in through the apical foramen. In case the canal is filled immediately the secondary hemorrhage due to the reaction causes an undue pressure in the apical space, and is liable to set up an active inflammation or congestion of the peridental membrane, and if septic conditions are present will lead to an inflammation. About thirty per cent. of the cases treated by this method in our clinics show symptoms of hyperæmia in spite of the fact that we follow out the above rule. It is our candid opinion that many teeth are lost or suffer from blind abscess where the above instructions are not rigidly adhered to. When pressure anesthesia of any sort is resorted to in the removal of pulps every possible antiseptic precaution ought to be taken to avoid forcing septic matter into the apical space.

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ROOT CANAL FILLING.

I wish to say a word on the subject of root canal filling. I am very glad Dr. Kells brought that question up in his paper, for I believe a large percentage of us treat these cases entirely too much through the pulp

chamber. I believe if we cannot get results in two or three treatments we are justified in concluding that there is trouble around the end of the root which we will not be able to properly handle through the pulp chamber. In such cases I prefer to fill the root canal, and, if necessary, make an opening through the alveolar process. I believe it is a mistake to carry a tooth along through weeks and weeks of treatment through the pulp chamber, and many of us make a mistake in treating such teeth too often. Unless something calls for it we ought not to treat a tooth through the pulp canal oftener than once a week. Whenever an abscess forms about a root it nearly always surrounds the apex of the root. It destroys the peridental membrane around the sides of the root, consequently treatment through the root canal does not get at what we want, and after pus has been present for a long time, if the surface of the root has been bathed in pus for many weeks, we will get satisfactory results from treatment through the pulp chamber in very few cases. I have not practiced immediate root filling in such cases but I have done it "more immediately" than is the general custom.—Arthur D. Black, Dental Review.

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A CURE FOR PYORRHEA.

The treatment is surgical. First pass a flexible steel, blunt pointed needle (made by Sharp & Smith, 92 Wabash avenue, Chicago) to the bottom of the pocket, flooding the same with a local anesthetic. Then commence removing the "pyorrhæal deposits," confining your efforts to one tooth until a thorough removal is accomplished, even though it takes

hours. After all deposits are removed, flood the pocket with warm C. P. lactic acid. Now let the tooth alone, give it absolute rest, and in two or three weeks your case will be well. If the tooth is loose it should be banded or ligated with No. B sewing silk to hold it firm. (I use sewing silk waxed, because it is much better than floss silk.) Instruct the patient to massage the gum night and morning with powdered sulphur.

The instruments used for this work are made by Charles Grafrath, 158 West Twenty-seventh Street, New York, and Lukens & Whittington, 624 Race Street, Philadelphia, Pa., and the anesthetic by Dr. Chas. Oakman, Cleveland building, Detroit, Mich. *

Many dentists give as an excuse for not doing this work, "Patients won't pay for it." This, I feel, is a mistake, for Dr. Younger came to Chicago practically a stranger and in a very short time patients were flocking to him from all directions, willing and anxious to pay him twenty-five dollars an hour, or any fee he might name, if they could only get rid of their "pyorrhea." He is now located in Paris, and his practice is so large that it is not possible for him to treat all who come to him.

"Pyorrhea" is a local disturbance, and I know of no disorder that will yield so quickly to treatment.—Robert Good, Dental Digest.

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TO CONTROL SALIVA.

An annoying operation to successfully perform is filling a lower third molar that cannot, for half a minute at a time, be kept free from saliva. Such a case presented in a young lady of highly nervous temperament, whose flow of saliva was excessive.

Placing of the dam was impracticable, and napkins placed in the mouth would almost immediately become saturated. This annoyance was overcome through the action of atropin sulfate, a dose of which (1-120 grain) I had her take three-quarters of an hour before her next appointment. At that time I found the mouth very dry, though not uncomfortably so for the patient. This salt of atropin has a much better effect on the secretion than the ordinary alkaloid. Its manifestations last from four to five hours.—H. Otis Logue, Stomatologist.

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STERILIZING INSTRUMENTS.

In sterilizing instruments, I think that boiling water is to be depended upon. Being at the hospitals considerably I noticed that that is the principal method of sterilization. I use about a teaspoonful of sodium carbonate to a quart of water. It leaves a little coating, but if that is rubbed with a sterilized cloth, it will give the instruments a very nice polish. You cannot use the boiling water for sharp instruments. For them I use twenty-five per cent. carbolic solution, laying the instruments in it for four or five minutes. Towels from the laundry are practically sterilized. I notice in the hospitals that they use towels which have been ironed, which makes them perfectly sterile.—C. K. Teter, Dental Summary.

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LOCAL APPLICATION BEFORE INSERTING HYPODERMIC NEEDLE.

Before inserting a hypodermic needle, apply a drop of chloroform to the skin; it is antiseptic and anesthetic.—Frank Pollard, Clin. Med.

WATER AS A LOCAL ANESTHETIC

J. A. Wyeth has become convinced that the Schleich method of anesthesia by the infiltration of weak cocain solutions is due more to the fluid itself than the contained salt. He gives the history of two cases, both men, with small tumors on the back. In both removal was painlessly done under water anesthesia, which acts by pressure on the end organs of the sensory nerves, destroying their sensibility. Ten minims of sterile water were used, the needle resting in the substance of and not below the skin. This procedure was repeated in the same continued linear direction, until a sufficient length of anesthetized skin was produced. The needle was thrust between the capsule of the tumor and the subcutaneous aureolar tissue and the water freely injected so as to lift the skin from the tumors, which was separated also by a similar manipulation from the underlying connective tissue.—New York Medical Journal.

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CAUSE OF EROSION.

The agent producing erosion is undoubtedly acid. No acid, no erosion; no acid, no decay. The tooth-brush does not do the mischief. No question put to me by my patients is more discouraging than this of what to do to prevent erosion. We can control the conditions somewhat if we recognize the fact that an acid, and only an acid causes the disease. I tell my patients that eternal vigilance is the remedy. Alkaline washes are good; but until we know more definitely the exact cause, we cannot, after all, advise our patients to the best purpose.—H. A. Smith, Dental Summary.

STERILIZING THE HAND-PIECE.

The mechanism of the handpiece will rust from boiling because many of its parts cannot rapidly evaporate moisture while hot, on account of their construction. Gasoline, however, is friendly to the mechanism, the sheath being removed. After such a bath it will run easier than ever by being fed with a few drops of oil. A frequent treatment of this kind will keep a handpiece in beautiful condition. Brush the outside of the sheath with a ten per cent. solution of formaldehyde.—J. J. Sarrazin, American Dental Journal.

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DENTAL PRESCRIPTIONS.

In order to counteract the miscellaneous prescribing of commercial articles of less definite composition, a number of new preparations have been introduced, two of which are of special value to dentists. Liquor Antisepticus (antiseptic solution or mouth wash), and Pulveris Acetanilidi Compositus (compound acetanilid powder). The ingredients of the former are here given:

Boric acid	20.00 Gm.
Benzoic acid	1.00 Gm.
Thymol	1.00 Gm.
Eucalyptol25 cc.
Oil of peppermint50 cc.
Oil of wintergreen25 cc.
Oil of thyme10 cc.
Alcohol	250.00 cc.
Water, to make	1000.00 cc.

In prescribing this solution, it is never necessary to write a prescription for these various ingredients as given above. Now that the solution is recognized by the U. S. P., all we have to do in prescribing is to write for the official title, as follows:

℞ *Liquoris antiseptici*, f. oz xij

Sig.—Use as a mouth wash.

While we do not need to remember the exact formula, it is well to bear in mind that this solution contains two per cent. of boric acid, 0.1 per cent. each of benzoic acid and thymol, 25 per cent. of alcohol, and other antiseptics and aromatics added to water as the vehicle.

I will ask my readers to write this prescription and instruct your patients to have it filled by the pharmacist, thereby realizing a satisfaction over the method of simply signing your name, parrot-like, to a printed prescription, so-called, furnished so freely for commercial products.

The formula for the compound acetanilid powder is:

Acetanilid	70 parts.
Caffeine	10 parts.
Sodium bicarbonate	20 parts.

In those cases where antipyretic or analgesic drugs are indicated, it is much safer and better practice to prescribe such recognized drugs as phenacetin, antipyrin, or acetanilid, than to miscellaneously prescribe proprietary preparations the constituents of which we do not know without resorting to chemical analysis.

A prescription for the compound acetanilid powder should be written thus:

℞ *Pulveris acetanilidi comp.*, gr. xv
Ft. chartulæ No. 2.

Sig.—Take one powder at once and the other in one hour, if needed.

In prescribing any analgesic drug for internal administration, it is best not to write for more than two or three doses. For oftentimes the patient is suffering such pain that he

will ignore your instructions, thinking that—"if one dose is good, several would be better,"—and will take one dose after another until relief is obtained, and the drug may have accumulated, subsequently producing toxic symptoms. This possibility can be avoided by prescribing only such an amount as you are reasonably certain will produce the desired effect.—J. P. Buckley, *Dentist's Magazine*.

* *

CLASS OF PEOPLE AFFECTED BY EROSION.

We usually find erosion existing in the following class of patients: Those who make excessive use of carbohydrates, the gouty, the rheumatic, the anæmic, the tubercular, the scorbutic, and people who usually live very high without dental hygiene. It is, however, more frequent, in the anæmic and neurasthenic class. It is usually accompanied with hyper-acidity of the stomach, a fetid acid odor of the breath, and with repeated and frequent eructations. I wish to call attention here to the point that I have never seen cases of erosion existing in the mouths of tobacco users. It may exist, but I have never observed a case. (It seems to me tobacco may be a good anti-toxin for erosion).—W. G. Hamm, *Dental Summary*.

* *

FORMALDEHYDE.

Polymerized formaldehyde—formaldehyde is a solid form—has all the qualifications necessary to a perfect dental antiseptic. It is most penetrating; it is soluble in water; it does not produce a coagulum; when properly applied its toxic or escharotic effect is *nil* and pain sel-

dom or never follows its application unless it be in dead teeth, in which the simple act of opening seems to arouse all the latent forces around the apical portion of the tooth. But the pain and soreness following its application invariably subside within a few hours, when the tooth is ready for permanent filling.—L. B. Lawrence, Dental Cosmos.

* *

PYORRHEA ALVEOLARIS.

The steps necessary to a cure are thorough removal of the deposits, surgical cleanliness of the parts, a fixing of the afflicted teeth to obtain rest, and some medicinal agent that will assist nature to arrest the disease and to regenerate the tissue.

After a thorough removal of the deposits the pockets and surfaces should be thoroughly washed or flooded with warm lactic acid, full strength, of trichloroacetic acid, five per cent.

Obstinate cases may require radical treatment. In cases where the pus seems very persistent, it may be due to a little necrosis, and in order to provide a better drainage an opening should be made at the bottom of pocket through the gum. In cases where the tooth will not tighten it is a wise plan to devitalize the pulp and fill the root canal, and in still more obstinate cases it is almost a sure method to extract the tooth, slightly deepen the socket, and replace the tooth in the deepened socket and gain a new union. Massaging the gums with sulphur three or four times a day has been advised by Dr. Harlan, or a paste may be made from the following formula: Boric acid, 2 oz.; tannic acid, 1 oz.; glycerine, 1 oz., and tincture of cantharides, 20 gr., the latter being

preferable where there are many amalgam fillings present, as the sulphur may have a discoloring effect upon the amalgam. A prescription should be supplied to the patient for an astringent, antiseptic stimulating mouth wash to be used daily.

The tooth brush may be kept sterile by taking a large-size test tube and constructing it about one inch from the bottom, providing it with a rubber cork as a stopper and placing a little formalin tablet or formaldehyde in the lower chamber and the brush in the upper chamber. It will then become sterile without injury to the brush.

Before concluding it may be wise to speak with reference to fees regarding this class of work. We may not all have patients who are able to pay us ten or fifteen dollars an hour for our services, but it is possible for any dentist to obtain three, four, or five dollars an hour, and a good many practitioners can afford to work for that fee.—T. A. Hardgrove, Dental Review.

* *

NEW MODE OF STERILIZING INSTRUMENTS.

The sterilizing of instruments may be done in the following manner: Take a copper pan or kettle which is polished on the inside, and fill it with water from the hydrant. This must stay in the vessel for three and one-half hours, when it is ready for use. All germs by this time have been destroyed. If you like to boil the water you can do so, but it is not necessary. For each ounce of this water add one-half grain of sodium carbonate and place all your instruments in this. They should be scrubbed and cleaned in the sterilizing water, rinsed in another vessel, and dried with pieces of cotton cloth

which have been heated to 400 degrees F. in a copper box. This is easy to do now, as electricity is so cheap, and is always ready for use. The French and other continental cooks use copper kettles and saucepans for their cooking, with a bright interior, as food always tastes better when so cooked. The small amount of colloidal copper dissolved in this manner acts as a complete sterilizer, and hence the good taste of the food. If you cannot get a suitable copper vessel, strips of polished copper may be suspended in the water to be sterilized, giving a larger surface for the water to act upon.—A. W. Harlan, *Items of Interest*.

* *

IMMEDIATE ROOT-FILLING.

It is not considered good practice to fill the root canals at the same sitting after the removal of the pulp by high pressure method.

There are two important reasons for not doing so, the first, danger of secondary hemorrhage, and second, that the tissue beyond the apex of the tooth being thoroughly anesthetized, there is great danger of forcing the root filling through into the apical space.

After removing the pulp, using high pressure, the writer washes the canals thoroughly with pyreozone, and then, after drying, places a few fibers of cotton dipped into oil of eucalyptus loosely in the canals, and then fills the pulp chamber with dry absorbent cotton which absorbs the blood in case of hemorrhage. Let this dressing remain for from three to ten days, depending on convenience, and then remove and fill permanently.

Since adopting this method the writer has had very few cases of sore-

ness. In cases where it was found, removed dressing to find that there had been extensive secondary hemorrhage. Repeated the dressing, and painted the gums with equal parts of aconite and iodine and trouble subsided.—Ed., *Dentist's Magazine*.

* *

SALIVA.

The saliva is the mixed secretion of the parotid, submaxillary and sublingual glands and the small mucous glands of the mouth. Saliva contains three varieties of secretion: Serous from the parotid, mucous from the mucous, and a mixed from the submaxillary and sublingual. Mixed saliva is opalescent, tasteless, generally alkaline, specific gravity 1004 to 1009, contains serum-albumen, globulin, mucin, urea, amylolytic ferment called ptyalin, and a proteolytic and lipolytic ferment, also salts, the most common of which are ammonium sodium and potassium and sulpho-cyanid, combinations derived from the parotid glands. The nasal secretion is practically the same as the saliva.—W. H. Fitzgerald, *Dental Brief*.

* *

THYMOL IN THE TREATMENT OF ABSCESSES.

Thymol is very insoluble under ordinary circumstances, but it dissolves in oil of eucalyptus, when it becomes a valuable agent in the treatment, especially of the mild forms of chronic blind abscesses.—Geo. W. Cook, *Western Dental Journal*.

* *

VICE VERSA.

The old theory that a bad stomach affects the teeth is rapidly giving place to the new theory that a bad stomach instead of causing bad teeth is caused by bad teeth.—*Dental Era*.

METHOD OF MAKING SURFACE OF WAX SMOOTH.

A smooth surface on a "waxed up case" can be obtained without spoiling festoons or gum carvings by adopting the following method: Smear the surface of the wax with a pellet of cotton saturated in chloroform. Burn off the chloroform with an alcohol lamp or a small Bunsen flame. This will leave a smooth, glossy surface on the wax and will not destroy previously carved gums.—Dental Review.

* *

METHODS AND MEANS.

In opening a tooth with putrescent pulp, where the odor is something terrible, just apply to the cavity a small pledget of cotton previously dipped in Terebene and the offensive odor will change to that of attar of roses. Terebene is an antiseptic liquid manufactured by P. D. & Co. An original bottle is sufficient for two or more dentists.

Tr. Lavender Comp., U. S. P., costs sixty cents per pound and may be diluted to make a gallon or more.

LIVINGSTON DENTAL CLUB, MT. MORRIS, N. Y.

The following dentists have organized, forming the Livingston Dental Club: Dr. E. R. Griswold, Dr. F. W. Kuhn, Dr. G. H. Cutler, Dansville, N. Y.; Dr. J. W. Cowan, Dr. C. J. Fraley, Geneseo, N. Y.; Dr. M. C. Bradley, Avon, N. Y.; Dr. E. A. Clapp, Livonia, N. Y.; Dr. W. H. Povall, Dr. G. T. Moore, Mt. Morris, N. Y.; Dr. Wm. Gamble, Wayland, N. Y.

The object of the organization is to promote among the people, through

A few drops of the diluted solution in your cuspidor will have pleasant effect on your patients.—H. B. Davis, Dental Record.

* *

TREATING CAVITIES WITH NITRATE OF SILVER.

I believe it is a good practice when you have some evidence of a superficial decay to touch it with nitrate of silver and see how deep it will go. In a few weeks that will show you how far the area of decay has gone. Lots of times you need not go any further, as that will stop the decay.—J. N. Crouse, Chicago.

* *

FORMALDEHYDE.

The forty per cent. solution is far too strong for use in the mouth. Five per cent. is the strongest for dental use and three per cent. and two per cent. are enough in most cases. A drop or two of a three per cent. solution, placed in the canal of a putrid tooth, will in two days, if sealed in properly, render it absolutely sterile and quite odorless.—B. J. T. Bennette, Dental Record.

the medium of the public schools and press, a better knowledge of the care of the oral cavity and the preservation of the teeth, and for the advancement and elevation of dentistry and a mutual improvement of its members.

Meetings are held quarterly with the different members of the club. Dr. J. W. Cowan was elected President, Dr. G. T. Moore, Secretary-Treasurer. Yours very truly,

G. T. MOORE, Secy.

Per M. D.

A PUBLIC DENTAL LIBRARY IN THE CITY OF COLUMBUS, OHIO.

The Trustees of the new Columbus Carnegie Library Building, a handsome structure costing \$250,000, have set apart a room 40 by 60 feet for the exclusive use of a Dental and Medical Library.

Columbus being centrally located and of easy access to the majority of the dentists in the State, should be the home of what the dental profession has hitherto been without—a library complete in all the literature of the profession, making it invaluable for research and reference.

The local dentists have organized a Dental Library Association for the express purpose of bringing this matter to a successful issue, and the work thus far accomplished far exceeds our expectations. The Columbus dentists

alone have donated \$500 in cash and a number of books and magazines.

To make this library complete in embracing all known works pertaining to our specialty and complete files of all the journals published, we desire the coöperation of every dentist in the State. Any old and rare works, copies of old journals, etc., will be gratefully received, inscribed with the name of the donor, and recorded to his credit in the library catalogue. Please communicate with us concerning any literature you may have that you can donate to this cause, giving titles and authors of books; names and dates of journals, etc. In case of duplication they will be valuable for exchange with other libraries.

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WE WANT SHORT, HELPFUL CONTRIBUTIONS.

Dentists are invited to send in items of general interest to the profession, and space will be gladly afforded and credit given. If any dentist has a new or better way of performing some operation, either at the chair or in the laboratory; if he has a new remedy, a better way of keeping books or collecting accounts; if he knows of anything that will be of assistance to his fellow practitioners; or if he has an experience that would serve as an object lesson to any member of the profession, let THE D. D. S. give it to the world.

* *

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